Virginia Medical Monthly

Official Publication of the Medical Society of Virginia

Vol. 70, No. 7
WHOLE No. 1093. RICHMOND, VA., JULY, 1943. $2.00 A YEAR
25 CENTS A COPY

THREE GALL BLADDERS*

W. Lowndes Peple, M.D.,
McGuire Clinic, St. Luke's Hospital,
Richmond, Virginia.

Were the title of this paper, "Three Feathers" or "Four Roses", I feel sure that my audience would be filled with a keener anticipation and interest than can possibly be elicited by such a caption as "Three Gall Bladders". None the less, that is my title and I shall stick to it.

Had I only in mind the reporting of three striking cases of gall bladder disease I would have used a title such as this, "Report of Three Unusual Cases of Gall Bladder Disease". But that is not what I am trying to do at all. The purpose of this paper is to show in logical sequence the steps or stages that take place when gall stones are passed and a spontaneous cure is effected.

Some of you who were not yet hatched in that era when the gall bladder was a touch-me-not in surgery may not be aware of the many treatments and methods designed to assist nature and to aid the sufferer from gall stones in throwing off the offending calculi. It was devoutly believed that this could be done, and all one had to do to accomplish it was to grease or lubricate the gall bladder, the cystic and common ducts, and let the stones pass and then drop into the duodenum, and on to the end of the line. Olive oil was the lubricant of choice in most of the methods employed.

I recall an article in one of our medical journals about this time, in which the author described the entire treatment in minutest detail. First, one starved a bit and got the gastro-intestinal tract reasonably empty with saline laxatives. Then, he drank a pint of olive oil in the erect or standing position. Next he lay upon a sofa on his right side, so as to pour the oil into the duodenum and common duct. After some twenty minutes in this position it was necessary to prop the body up, standing on one's head, or rather the shoulders. Twenty minutes to an hour of this, and the oil would flow from the common duct into and through the cystic duct, and on into the gall bladder, distending that organ and greasing the contained stones thoroughly. Later on, a dose of saline was given to rid the bowel of the stones which had gradually been emptied into the duodenum.

It is an established fact that many small gall stones have passed through the ducts and been recovered in the stools of patients without the aid of either oil or gymnastics. The quacks, realizing this, and seizing on the olive oil treatment, went one better, and guaranteed the passage of stones. To make good this prophecy, they gave the oil without the gymnastics and without calling it oil, and very cleverly they made the purgative strongly alkaline, so that the guarantee was always fulfilled. The subject would pass innumerable green balls, a little larger than green peas, which were for most laymen perfectly satisfactory gall stones. The fact that they were soap balls made by the oil and an alkali troubled the quacks not at all.

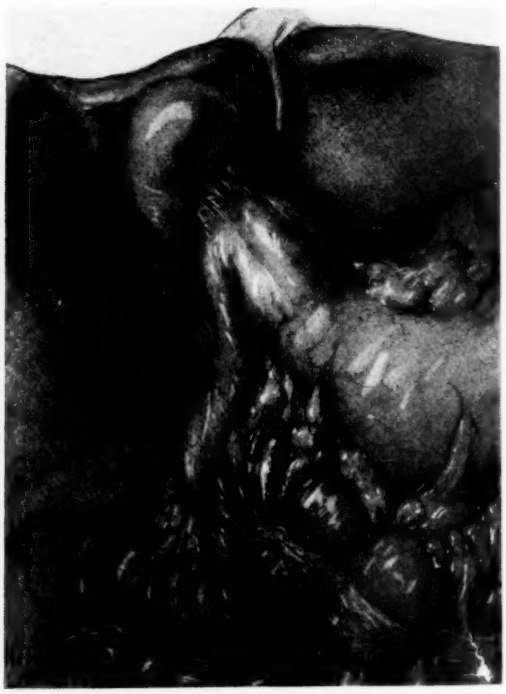
The gymnastics were perfectly logical if one forgets the ampulla of Vater and the muscular structure of the gall bladder and its ducts, as well as the nervous mechanism that is in control. The only illogical point to my mind is that, were one enough of an acrobat or tumbler to assume all of these attitudes and postures, and to hold them, he would not need any kind of treatment, for these people don't have gall stones at all. It is the fat woman in the

*Read before the Richmond Academy of Medicine, Richmond, January 26, 1943.

XUM

side show who would be the victim, not the beautiful lady on the white horse or the man on the flying trapeze—they just don't have them!

We then may all agree that it is possible for little gall stones without, and possibly with, the aid of gymnastics and lubricants, or both, to pass through the ducts and into and out of the bowel. But what about the big ones, one and two inches in diameter? Do the little muscular ducts dilate and let these large masses go through? There is one, I might say, ample precedent in the female economy. The cervical canal is a mighty narrow channel that dilates to let mighty big things get through, but that is really another story.



Case 1.—A broad belt of adhesions is shown between the distended gall bladder and duodenum.

In the course of 15 years I have acquired three cases of gall stones that show the way in which all large stones, and may be many small ones, accomplish what might be called an exit by the "Southwest Passage", and it is about these that my paper is built.

Case 1. Mrs. R. B. A., age 42, married, mother of several children. Her story was of gaseous indigestion and dyspepsia with pain and soreness over the upper abdomen. These symptoms had troubled her only for the preceding six months. There was no story of acute inflammatory attacks severe enough to put her to bed and there had never been any jaundice.

Before being referred to me for operation she had been thoroughly studied with the following findings: She had a pathological gall bladder containing two rather large stones, but the gastrointestinal x-ray study revealed what appeared to be a duodenal ulcer also. A portion of the duodenum was fixed and could not be pulled down with the gloved hand. There was no filling defect but this area would not move.

As a tribute to the cleverness of these x-ray people, of whom we demand so much, I will give Dr. Tabb's conclusions. To most of us this will prove a tribute to his diagnostic skill, to the other more obstinate few, it will at least enhance his reputation as a prophet. His closing statement was as follows: "There is no evidence of an organic lesion of the stomach. The patient has a slight and practically constant deformity of the base of the duodenal bulb which is probably an ulcer. This is associated with considerable spasticity and irritability and some pylorospasm. Patient has at least one large gall stone and it would be possible for a pathological gall bladder to cause the above findings and to simulate a duodenal ulcer."

The Operation. An upper right rectus incision showed a gall bladder thickened and tightly packed with stones. It was firmly adherent on its lower half to the duodenum by a very broad adhesion. There was no other evidence of an ulcer. The appendix was of the obliterative type. The adhesion between the gall bladder and the duodenum was severed, thus mobilizing the duodenum. The gall bladder and the appendix were then removed. This patient made a quick smooth recovery and has remained well.

Case 2. Miss Mary C., a maiden lady of some 62 drab and dreary winters, was small and thin, her features pointed and narrow, her thinning grey hair knotted tightly at the back of her head. She was a "wind swept woman". She lived in the country and raised chickens in the intervals allowed her by a most recalcitrant gall bladder.

For the preceding twenty-five years, a quarter of a century, she gave the clear matter of fact recital of

attack after attack, many of these putting her to bed and accompanied by fever, pain, and extreme tenderness over the upper abdomen. She took olive oil, and at first had almost two whole years of peace; but, then the attacks returned and dogged her very existence up to the time we met her.

Just four months prior to her admission to St. Luke's Hospital she developed jaundice which steadily deepened. She now had all the miserable symptoms produced by diverted bile—nausea, vomiting, loss of appetite, physical weakness, and loss of weight. She had but little fever, very little pain, and but slight tenderness. She was a deep yellowish green color and her sclerae were deeply injected. Though 5 ft. 5 in. tall, she weighed but 100 lb. and presented the picture of rather marked emaciation. The liver was enlarged and extended several inches below the ribs.

Case 2.—The gall bladder has been opened at its fundus, a scalpel is passed from the interior of the gall bladder through the area of adhesions and into the lumen of the duodenum.

A flat plate showed no stones but a shadow which resembled the gall bladder. Dr. Tabb stated, "The visualizing of a gall bladder on a flat plate is indication of a pathological gall bladder."

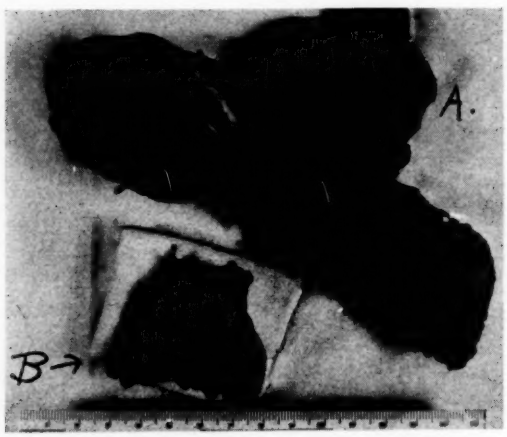
The clinical picture presented with the slow onset of jaundice following gall stone attacks over a period of twenty-five years would certainly suggest malignancy. In spite of the fact that she had moderate fever and moderate leucocytosis with a high polynuclear count, it was thought that she probably had cancer either of the liver or bile ducts. However, it was unusual for a cancer large enough to produce jaundice not to be palpable in so thin a woman after five months. As the condition was growing steadily worse, an exploratory operation was decided on with a view to diverting the bile back into the intestinal tract and at least relieving her of her jaundice.

Under light general anesthesia, a right upper rectus incision was made, revealing a small contracted gall bladder buried in adhesions with only its dome showing. Many adhesions were separated until the common duct could be palpated. This was as large as one's index finger and of firm consistency like a mass of inflammatory tissue. It did not have the feel of a string of beads as though stones were lying in the lumen. The head of the pancreas was large and somewhat hard. There was a stone about one-eighth inch in diameter which was tightly imbedded in the gall bladder in its upper third, and opposite to this point was an area of dense adhesions to the duodenum about three-quarters inch in length and one-half to three-quarters inch in breadth. Evidently nature was trying to effect an artificial opening into the duodenum at this point. The gall bladder in the beginning was noted as being too small to fit the half of a Murphy button and too much thickened to lend itself to proper suturing. The fundus of the gall bladder was opened with a knife and the gall stone removed with forceps. The knife was then inserted through the wound into the gall bladder; and, as the assistant spread out the duodenum, a stab wound was made from the inside of the gall bladder through the area of adhesions into the duodenum. A curved forcep was then passed into the duodenum and the fistula widened. The fundus of the gall bladder was then sewed up and covered over with omentum. In this way I completed a cholecystenterostomy which nature was endeavoring to perform. There was little bile in the gall bladder but I demonstrated its patency down to the common duct.

XUM

The abdominal wound was closed without drainage, and the patient made a rapid and uneventful recovery. The time of operation, twenty minutes, was so short and the trauma so slight that she had little or no post-operative discomfort. The nausea stopped at once and bile appeared in the stools in a few days. When she left the hospital her jaundice had almost disappeared and she was rapidly gaining in weight and strength.

I am inclined to think the case is one of intractable jaundice due to stones in the common duct, as no evidence of a cancerous growth could be found at operation. Should symptoms arise from an infected common duct or should the pain return, one could go in again and remove the stones or even the common duct itself with impunity.



Case 3.—A. The gall bladder and duodenum are open, showing a large stone remaining in the gall bladder with a probe passing through the fistula between the gall bladder and bowel. B. Small segment of the ileum with stone fastened in its lumen at point of obstruction.

I report this case somewhat in detail, not only because the operation was new to me but because of its simplicity in relieving this feeble, jaundiced old woman of a well nigh fatal illness. Should anyone setting out to do an anastomosis of the gall bladder to the bowel encounter so fortuitous a patch of adhesions, I would remind him of the happy outcome of this case lest he impetuously separate them without recognizing their infinite value.

That our diagnosis of a benign condition was correct in this case seems amply proven, for we kept track of her for several years. In this time she gained in weight and strength and had no recurrence of her symptoms. Thus she was enabled to continue without let or hindrance the rearing of chickens from chickhood to maturity.

Case 3. Mrs. C. B. W. I was called in to see this case with Dr. Thomas F. Gill. The lady was 78 years of age and was quite feeble. She had had two attacks of coronary thrombosis, the last being several months before. She had been seen by Dr. James H. Smith with Dr. Gill prior to this time, for what appeared to be subacute inflammation of the gall bladder.

Her temperature was normal; pulse very poor but not over 70. The abdomen was more or less distended, but there was no rigidity. She was suffering from paroxysmal abdominal pains. Her bowels had moved that morning and on the day before. She was vomiting a good deal of bile in small quantities. She described the pains as being very much like labor pains. She was tender all over the abdomen, more marked in the left lower quadrant than elsewhere.

She had a small umbilical hernia and once had inguinal hernia on the right side, for which she wore a truss. There was no protrusion at this time in either locality.

I advised against operation and felt that the patient was an extremely bad risk if an operation should have to be done.

We agreed to leave off everything by mouth except water, and to give her enough Pantopon to keep her quiet. I did not think the gall bladder was involved at that time.

It was my opinion that we were dealing with a partial obstruction of the large bowel most probably due to a new growth. Since she grew no better she was removed to St. Luke's on August 30, 1942. She was bitterly opposed to an operation of any kind, stating that she was too feeble to stand it. I felt that her judgment in this was sound and did not urge it. Glucose by vein and other supportive measures failed to give her any relief and on September 3rd, four days after admission, she died.

AUTOPSY

"Autopsy performed on this elderly white female about one hour after death was limited to examination of the abdomen. The body was that of a well developed elderly female. No particular markings of interest were to be seen.

"Upon entering the abdomen the intestines were seen to be distended and in following these through there was noted to be about 15 inches about the ileocecal valve an obstruction in the ileum. At this point the bowel was somewhat red, congested and there was felt within the lumen a firm rounded object. Upon opening the ileum at this point there was found to be filling the lumen a barrel shaped smooth rounded gall stone faceted at either end. This measured about 2¼ cm. in diameter and completely filled the lumen at this point.

"There were adhesions about the gall bladder which was greatly thickened and upon being opened showed a dense white wall quite thickened. Within the lumen of the gall bladder together with a small amount of thin bile there was another stone almost identical to that found in the intestine. The duodenum was opened and a probe passed from the gall bladder readily entered the duodenum through an opening which appeared to be 1 to 1½ cm. in diameter. No further stones were noted.

"The liver, spleen, kidneys were examined grossly without the finding of any further abnormality.

"The gall bladder and duodenum showing the fistula were saved intact as a specimen, as was also a small segment of the ileum where the free stone became fixed."

In reviewing this case I feel that I should have had a flat plate made of the abdomen. One of the alternate diagnoses made, or rather suggested, in this case was obstruction from a gall stone. A flat plate would have readily clinched the diagnosis, and had I been less acquiescent and more insistent on an operation, one might have been done under local anesthesia. On the other hand, had she survived this trauma, would not the gall stone remaining in the gall bladder have repeated the same maneuver with the same result? It was just about as large as the first one whose removal would inevitably have left a scar and some narrowing of the lumen. What a problem they present, these hazardous operations upon old feeble people!

To summarize, I have tried with these three cases to demonstrate the steps and stages by which large gall stones manage to pass seemingly impassable barriers in their perilous voyage to the outer world. In *Case 1* we see the ground work completed in the firm adhesion of the wall of the gall bladder to the duodenum. In *Case 2* not only has this been done but the stone is actually beginning to bore its way through the completed septum. In *Case 3* the drilling through has been completed and one very large stone has passed through the opening and gained access to the bowel.

Floral Eponym (5)

THE well known Wistaria (or Wisteria which is the preferred spelling) is named for the equally well known anatomist, Dr. Caspar Wistar (1761-1818). This honor has been claimed by Charles J. Wister of Germantown. The late Dr. Howard A. Kelly in his delightful book, "Some American Medical Botanists", decides in favor of Dr. Wistar in spite of the preferred spelling. The Abbe Correa da Serra gave the name Wistaria to this beautiful climber in honor of his friend Dr. Wistar but Nuttall wrote Wisteria, although he stated that it was named after Dr. Caspar Wistar.

XUM

ADAMS-STOKES SYNDROME AS A COMPLICATION OF MYOCARDIAL INFARCTION—REPORT OF THREE CASES DEMONSTRATING TWO DIFFERENT UNDERLYING MECHANISMS*

JULIAN R. BECKWITH, M.D.
Clifton Forge, Virginia.

Adams-Stokes syndrome is usually associated with complete heart block. In this condition episodes of asytole occur and due to the decrease in cerebral blood flow, cerebral anoxemia results and a convulsion follows. Any condition that will produce recurrent episodes of cerebral anoxemia will produce the underlying mechanism of Adams-Stokes syndrome.

Myocardial infarction may be complicated by several conditions that will result in this mechanism. It is the purpose of this paper to report three cases of myocardial infarction during the course of which convulsions occurred. Electrocardiograms were obtained which demonstrate the probable mechanism responsible for the convulsion in each case. In one case an electrocardiogram was obtained during a convulsion.

Since the treatment depends on an understanding of the underlying physiological mechanism rather than a result of the mechanism, it is important to make a physiological diagnosis as to just what this mechanism is in each case.

Complete heart block was present in one case. Paroxysmal ventricular tachycardia occurred in the second case, and both conditions developed in the third case.

Complete heart block following coronary occlusion with myocardial infarction is not an infrequent occurrence. Rosenbaum and Levine found heart block of all types in 7 of 208 cases recently reported.[1] Of these cases, 5 had complete heart block at some time or other and 2 developed Adams-Stokes attacks.

When complete heart block is found to be present, effort should be made to increase the heart rate so that asystole will not occur. This may be accomplished by the administration of ephedrine sulphate, grains ⅜, every 3 or 4 hours. Adrenalin, minims three every hour, may be necessary at times. Barium chloride, grains ½ to grains 1 every 4 hours has been employed successfully also. Since the A.V. node is under partial control by the vagus and since in acute myocardial infarction vagal stimulation may be marked, atropine in full doses may be useful.[2] This will be discussed later.

The first case demonstrates complete heart block associated with convulsions.

Case I. J. S., white male, age 66, admitted 2/16/42.

Two days before admission, this patient developed sudden dyspnea followed shortly by a generalized convulsion. Several more convulsions occurred prior to admission. No history of previous cardiac disease could be elicited. On admission to hospital, he was cyanotic, orthopneic, and irrational. The retinal vessels were thinned and moderately sclerotic. The chest was clear to auscultation and percussion. The heart rate was 40 per minute. The rhythm was regular. A systolic murmur was present at the apex. The blood pressure was 170/65. The heart was enlarged to the left. No rub was heard. The abdomen was normal, and the extremities were negative. The Babinski was questionably positive bilaterally.

Laboratory studies showed hemoblobin to be 15.9 grams, R.B.C. 4.85 million, W.B.C. 12,300, with a moderate increase of the P.M.N. on the differential smear. The sedimentation rate was 5 mm. fall in 30 minutes, and 10 mm. fall in 60 minutes by the Cutler method. The urine was positive for sugar, and a few granular casts were present in the sediment. The sodium nitroprusside reaction was negative for acetone. The Kahn reaction was negative.

Chart I shows an electrocardiogram taken on the day of admission. Complete heart block is present with an auricular rate of approximately 115 and a ventricular rate of 46. The R-ST segments and T waves in leads II and III are typical of an infarction of the posterior basal portion of the left ventricle.

He was put in an oxygen tent and given ephedrine hydrochloride grains ⅜ every 4 hours. Fluids were limited and sedation given as necessary.

From the Department of Internal Medicine, Chesapeake and Ohio Hospital, Clifton Forge, Va.
*Read before the annual meeting of the Medical Society of Virginia, at Roanoke, October 5-7, 1942.

Chart II demonstrates an electrocardiogram taken on the day after admission. This shows a ventricular rate of 55. No further convulsions occurred.

Despite the fact that the ventricular rate had increased and the Adams-Stokes attacks had ceased, he went downhill progressively and died. The cause of death was apparently heart failure.

Arrhythmias occur frequently as a complication of myocardial infarction. These are of various types and one patient may show several types of arrhythmia at different times. Rosenbaum and Levine[1] report that 38 per cent of their series developed arrhythmia at some time. Ventricular tachycardia was present in 6 (3%). The mortality was 50 per cent in these cases.

Though ventricular tachycardia is not a common complication, it is an important one. Ventricular asystole may occur or ventricular fibrillation may develop. Either condition may be temporary and the patient recover or death may ensue. If the condition is temporary, transient cerebral anoxemia results and a convulsion occurs. Quinidine is the drug *par excellence* in the treatment of ventricular tachycardia. It increases the refractory period of the heart muscle and thereby decreases myocardial irritability.[3] It is this action that allows this drug to be of value in this condition. Quinidine is usually given by mouth without a test dose because the danger of the abnormal mechanism is greater than the danger of a toxic reaction. Three to five grains every 4 hours may be given until a normal rhythm is resumed. The dose is reduced, but should be continued for some time. Larger doses may be necessary. The ventricular rate will usually decrease and then normal sinus rhythm will be resumed.

The next case demonstrates paroxysmal ventricular tachycardia complicating myocardia infarction.

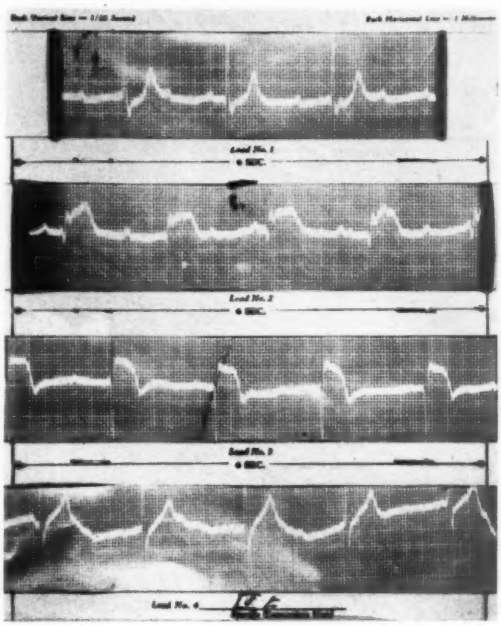


Chart 1.

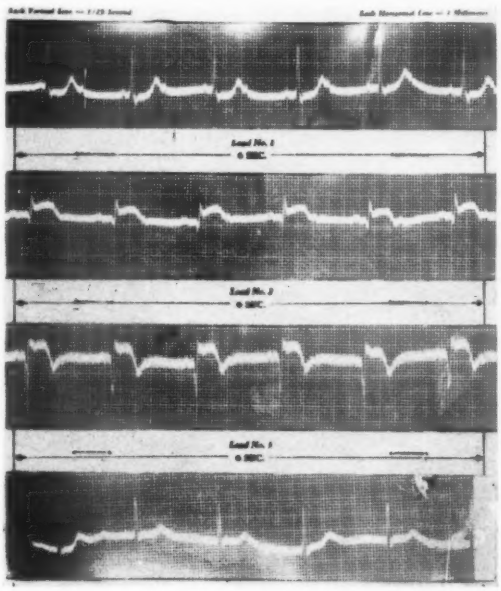


Chart II.

Case II. G. M., admitted to C. & O. Hospital October 4, 1942.

This patient was a 67 year old white male who had a history of definite angina for about 8 months. On the day of admission, severe substernal pain developed which radiated upward to the right side of the neck and to the right shoulder. This lasted about one hour; then improved, but 3 hours later, a similar pain developed which continued and was present on admission.

On physical examination, moderate cyanosis was present, and the skin was cold and clammy. The heart sounds were distant and a soft systolic mur-

XUM

mur was heard at the apex. The rate was 80 and the rhythm was regular. A few moist rales were heard in both lung bases. The blood pressure was 140/90 in both arms and 110 systolic in both legs.

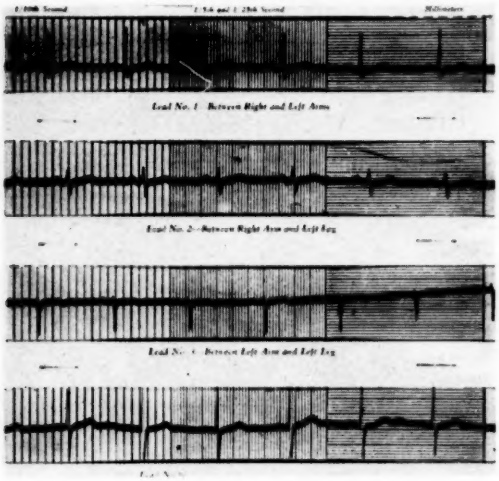


Chart III.

Laboratory studies showed the hemoglobin to be 15 grams, R.B.C. 4.73 million, W.B.C. 11,400, with an essentially normal differential smear. Sedimentation rate was 6 mm. fall in 30 minutes, and

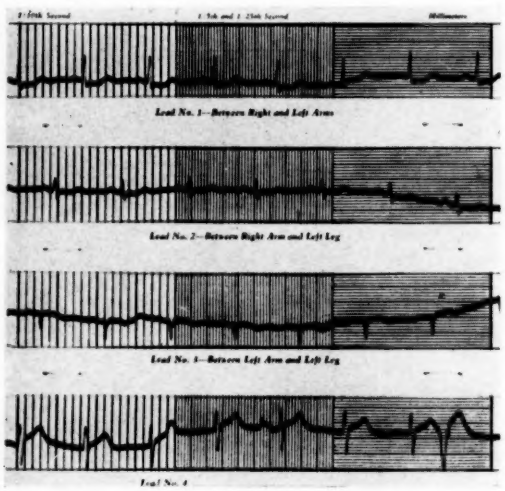


Chart IV.

13 mm. fall in one hour, using the Cutler method. The urine showed a specific gravity of 1022 and a two plus albumin, but no abnormalities of the centrifuged sediment. The blood urea nitrogen was 20.68 mg. per cent. A Kahn reaction was negative.

Chart III shows the electrocardiogram taken on September 25, 1942, nine days before admission,

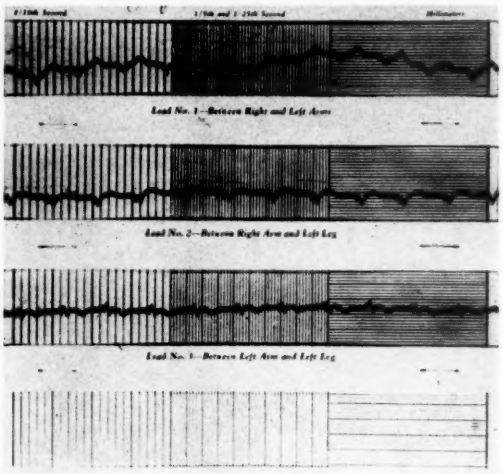


Chart V.

and chart IV shows the electrocardiogram taken when he was brought to the hospital. Definite depression of ST-I and a diphasic T-III had developed.

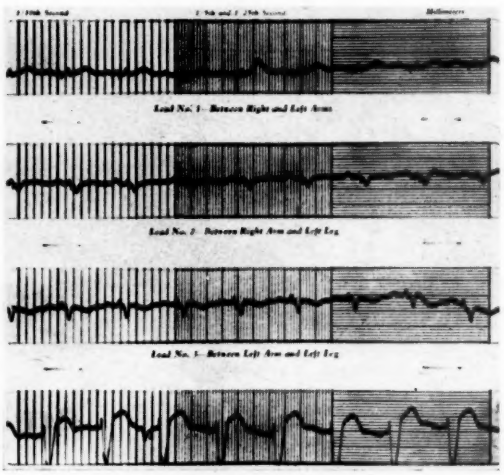


Chart VI.

He was put immediately to bed and given morphia as necessary for pain. Aminophyllin and a sedative were given regularly also. On the day fol-

lowing admission, his pulse rate became elevated to 110, and an electrocardiogram showed bundle branch block and nodal or ventricular tachycardia. We thought it was the latter (Chart V). Quinidine therapy was begun. About five hours afterward, he developed a convulsion which lasted about 10 seconds. Five such episodes occurred during the next four hours. At these times, asystole was usually present, but at times irregular heart sounds were heard. At 6:00 A. M. on October 7, 1941, the heart rate had decreased to 84 and was perfectly regular. An electrocardiogram taken showed a sinus rhythm with bundle branch block. (Chart VI). During the next two days, distention was troublesome and nausea was prominent. Dyspnea developed and he was put in an oxygen tent. The rhythm remained regular, but he gradually went downhill, developed Cheyne-Stokes respiration and died 5 days after admission. Postmortem examination was not performed.

It is our belief that this patient had an infarction of the posterior basal portion of the left ventricle with left bundle branch block. Paroxysmal ventricular tachycardia developed and subsequently episodes of ventricullar fibrillation occurred. The tachycardia cleared up as a result of quinidine, but he died of heart failure and not of the arrhythmia.

There has been recent emphasis on the development of afferent nervous impulses in an area of ischemia following coronary occlusion.[2] These reflexes are presumably carried through the sympathetic nerve tracts centripetally and efficient impulses are carried by the vagus. Marked vagal stimulation occurs with resulting coronary spasm. Ventricular fibrillation, ventricular tachycardia, and occasionally heart block may result.

It has been shown experimentally that surgical interruption of the afferent reflex arc will reduce the mortality of coronary ligation in dogs from 75 per cent to 10 per cent.[2] Since this is obviously impractical clinically, effort is made to interrupt the efferent limb of the reflex. This can be accomplished to a great extent by atrophine in adequate doses. The mortality in dogs after coronary ligation can be reduced from 75 per cent to 35 per cent. This can be further reduced to 30 per cent by administering aminophylline intravenously at the same time.[2] It appears important, therefore, that patients who are suspected of having developed myocardial infarction be given atropine and aminophylline intravenously until the danger is past. Just when this occurs is difficult to say. Leroy and Snider advise grains 1/75 of atropine and .48 gram of aminophylline intravenously at once. This may be repeated every four to six hours as the case suggests.

The following case illustrates an example of myocardial infarction, paroxysmal nodal tachycardia, ventricular tachycardia, complete heart block with ventricular asystole, and repeated convulsions.

Case III. Mrs. A. F. K., white female, age 48, admitted July 1, 1942.

This patient was said to be in good health and without symptoms of coronary disease until four days before admission to the hospital. At that time she developed substernal pain associated with dyspnea and sweating. This continued and she went home to bed. The pain improved on opiates after about twenty-four hours. However, twelve hours prior to admission, she began to have repeated convulsions. These were grand mal seizures and lasted 30 seconds to several minutes. She aroused between the episodes, was conscious, and seemed comfortable. Several convulsions occurred during that night and she was brought to the hospital the following A. M. A convulsion had just occurred as I walked in the room.

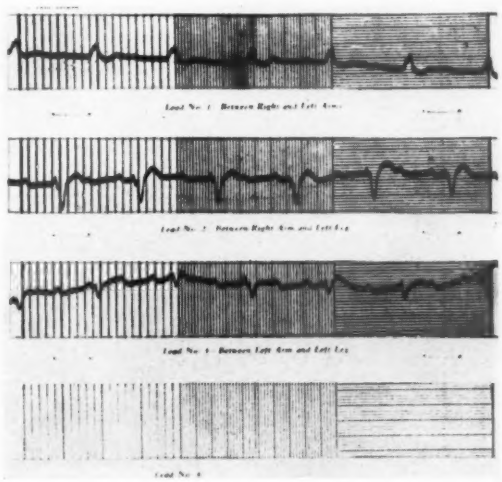


Chart VII.

The skin and mucous membranes were cyanotic. The face and extremities were cold. The neck veins were not distended. The pulse could not be felt nor

the heart beat detected with the stethoscope. The respirations were gasping and about 4 per minute. The peripheral veins were collapsed.

A needle was inserted in the femoral vein and 7½ grains of theamine (Lilly) and 7½ grains of caffeine sodio-benzoate were given in this vein. The respiration picked up to 16 per minute, and the heart beat was heard. An electrocardiogram, taken at this time (Chart VII), showed complete heart block. Left bundle branch block, discordant type, is also present. In a few minutes, the heart beat and respiration ceased again and theamine again was given intravenously. Again the respiration and heart beat commenced. The blood pressure became obtainable and was found to be 110/70.

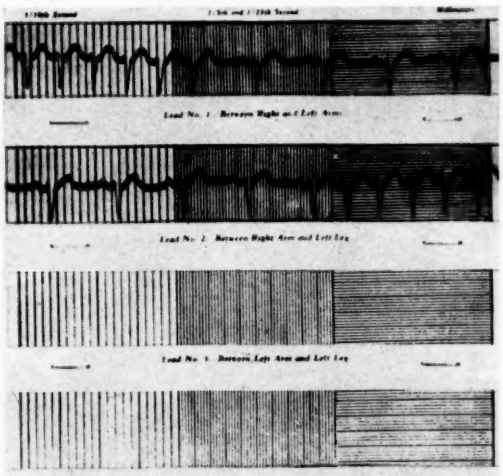


Chart VIII.

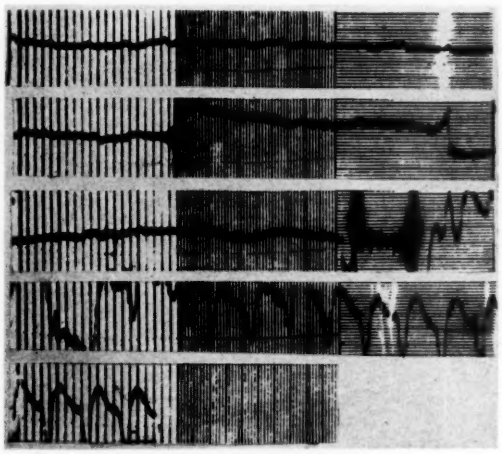


Chart IX.

General physical examination was then done while an oxygen tent was being rigged up. The chest was clear. The heart rate was approximately 80 per minute with sounds of good quality. The abdomen and extremities were negative. Patient in the meantime regained consciouness and began to talk. She complained of "gas" in the substernal region and dyspnea, but nothing else. Shortly thereafter the pulse rate became very rapid; then became normal again. Electrocardiograms were taken almost continuously. Chart VIII demonstrates such a tracing. It appears to be a nodal or a high ventricular tachycardia. Shortly after this occurred, another attack of unconsciousness and convulsions developed. An electrocardiogram taken during this demonstrates complete A.V. block with ventricular standstill (Chart IX). Complete heart block with ventricular asystole was present for approximately eighteen seconds.

She was given atropine, grains 1/100, every four hours; quinidine, grains three, every three hours; ephedrine, grains ¾, every three hours; and theamine, grains 7½ intravenously, every three hours. She continued to have repeated attacks of tachycardia which did not seem to produce symptoms. However, episodes of ventricular asystole continued also and with each episode, unconsciousness and a convulsion followed. Since the convulsions became more frequent and lasted longer, epinephrin hydrochloride 1-1000, minims three every 30 minutes, was given for two hours. This had no effect, and her heart finally ceased permanently. The final mechanism of death was unfortunately not recorded.

It is possible that larger doses of atropine might have been beneficial in interrupting the efferent vagal reflex which probably was responsible for the quickly changing cardiac mechanism, particularly heart block.

Permission for postmortem examination of the heart alone was obtained. This was found to weigh 350 grams. Both coronary arteries were found to be yellowish and moderately firm. The walls were thick and the lumen almost completely occluded so that a probe could not be passed. In the right circumflex, almost total obliteration was present at a distance 4 cm. from the orifice. The descending

branch of the left coronary was also markedly narrowed 1 cm. from its orifice. A thrombus 3 cm. in length was immediately proximal to this point. The endocardium and valves were not remarkable. Recent infarction was found to be present—involving the interventricular septum and the anterior and posterior wall of the left ventricle.

DISCUSSION

In the first two cases efforts to combat the arrhythmia were successful, but the patients died as a result of heart failure. In the last case the arrhythmias were not controlled, and the patient died as a result of them. Atropine and intravenous aminophylline were not given in the first two cases, and, in the last, atropine was not given in full doses. The experimental work indicates that these drugs should be given in large doses to all patients who have developed or who are suspected of having developed myocardial infarction. Papavarine may also be added to this armamentarium.[4]

SUMMARY

Three cases of myocardial infarction with convulsions have been presented. The underlying mechanism in each has been discussed. The treatment of these conditions has been briefly reviewed.

REFERENCES

1. Rosenbaum, Francis F., and Levine, S. A.: *Arch. Int. Med.*, 68: 913, 1941.
2. LeRoy, George V., and Snider, S. C.: *J.A.M.A.*, 117: 2019, 1941.
3. Goodman, L., and Gilman, A.: The Pharmacological Basis of Therapeutics, p. 539. The Macmillan Co., 1940.
4. Elek, S. E., and Katz, L. M.: *J.A.M.A.*, 120, 434, 1942.

DISCUSSION

DR. J. EDWIN WOOD, JR., Charlottesville: It is hard for us to visualize the real importance of this paper, and I shall endeavor to recapitulate some of Dr. Beckwith's findings for emphasis.

The fact that Dr. Beckwith's patients did not survive does not detract from the value of this report. It so happens that his cases had large cardiac infarctions. The same physiological mechanisms which his cases illustrate may, however, also appear in some people with small coronary infarctions, who may be saved for an extended outlook. Dr. Beckwith, therefore, presents this description of his patients quite rightly as examples of certain unusual cardiac mechanisms with added comments on management.

In brief, Dr. Beckwith presents three cases and two essential cardiac mechanisms. The first mechanism is complete heart block with Adams-Stokes syndrome and the associated syncope. The second mechanism also brings about cerebral ischemia through ventricular tachycardia. One case exhibited both ventricular tachycardia and asystole as well. Such an experience in a brief period is rare and Dr. Beckwith has reviewed the problems admirably.

He has explained how either or both of these mechanisms may occur in cardiac infarction apparently as a result of a strong cardio-sensory-vagal reflex with resultant coronary spasm and further myocardial ischemia. The value of atropine to break up this reflex has been made clear.

What are we to do when electrocardiographic studies are not available? No general rule is entirely safe, but it would seem logical to use atropine in those cases of coronary infarction associated with slow ventricular rates, certainly for the first day or two, and longer if the bradycardia persists. Again, strangely enough, atropine should be used where bursts of tachycardia occur associated in the periods between with showers of premature beats, thus indicating that ventricular tachycardia may exist. It is still not altogether clear that atrophine should be used in all cases routinely, and we have recently had instances in which atropine was wisely withheld. Here, as always, good clinical judgment must decide.

Clearly there are times for the use of ephedrine, quinidine and combinations of each of these, perhaps with atropine. However, Dr. Beckwith's paper clearly illustrates that at least quinidine should not be given routinely, as is often recommended. Theophyllin-ethylenediamine has its proper place as does hypertonic glucose solution intravenously, but again the routine use of any of these agents cannot be recommended.

As close as we can now come to the truth, it seems likely that in the early states of coronary infarction where the cardio-sensory-vagal reflex is strong, atrophine is always indicated. It is even possible that atropine is routinely indicated in the early stages of myocardial infarction. This must await further observation.

DR. PAUL D. CAMP, Richmond: I should like to say just a few words along this line. I have recently seen a very interesting case. The Adams-Stokes syndrome occurred after coronary occlusion in a patient who had had some heart disease prior to that and had congestive failure. Luckily, I got an electrocardiogram on him immediately, which showed complete auriculo-ventricular dissociation. He did not have any more spells of Adams-Stokes or cerebral anoxemia right at that time. I had given orders for both ephedrin and adrenalin to be left in his room. I happened to be there in the room the next morning when he had an attack. The nurse had used up the adrenalin, but we got some immediately and gave it to him subcutaneously. I admit that in some cases it might start ventricular fibrillation, but in this case it did not, and he got along very nicely. I gave him oxygen and then kept him under an oxygen tent. About five weeks later his family doctor let him get up some, and he had another series of spells, which were very

XUM

nicely relieved by the ephedrin at first and then the adrenalin.

I do think that in the cases in which there is complete A-V block, and you happen to see them completely unconscious from convulsion, it is safe to use adrenalin at that time and ephedrin afterwards. And, of course, use the atropin and aminophyllin too.

Then there is one other case I have seen, who had occasional attacks of complete block, and in between times his electrocardiogram did not show any evidence of heart-block whatsoever. Those cases throw us off from time to time, but it is important to remember that those cases may occur.

I enjoyed the paper and the discussion very much.

DR. BECKWITH, closing the discussion: I thank the gentlemen for their discussion.

This condition has been very interesting to me because recently we have seen a number of cases of other types of vagal hyperstimulation—that is, carotid sinus syndrome. We have been able to control several of these by atropine, but in one operation was required. This is only partially comparable to the present discussion. We have made it a policy to routinely give atropine to all patients whom we suspect of having sustained a recent myocardial infarction, but we don't know just how long we should keep this up. Aminophylline is also administered intravenously at the same time. Several cases, I am sure, have responded very dramatically, but in others the pulse rate has increased. I am not at all sure that some harm might not result.

OCD Advises Gas Cleansing Stations at Hospitals.

Hospitals should make complete plans for the immediate establishment, when needed, of "gas cleansing stations" for the care of injured persons who have been exposed to war gases, the Medical Division of the Office of Civilian Defense advises in Operations Letter No. 124 (Supplement No. 4 to Operations Letter No. 42). Large communities should establish at least one gas cleansing station without delay for training purposes.

The OCD recommends that the term "gas cleansing" be used to describe the procedure of removing vesicant liquids from persons and that the term "decontamination" be reserved for areas and objects.

The primary purpose of gas cleansing stations is the protection of hospitals and casualty stations and their staffs and patients from contamination by injured persons who have been exposed to vesicant agents, the Operations Letter points out. Contaminated persons who are not disabled are expected to cleanse themselves in the nearest private home or in other local facilities.

Existing facilities in casualty receiving hospitals must be converted into gas cleansing stations, it is pointed out, since under present conditions of scarcity of materials and manpower, construction of new facilities is generally not justified. Hospital facilities that should prove suitable are suggested as follows: hydrotherapy rooms, nurses or internes' locker and shower rooms, part of the outpatient department, garages or other separate structures. In the event these are not available, facilities to care for persons who are both injured and contaminated must be arranged in schools, gymnasiums, swimming pools, shower rooms, club houses and community centers.

Cleansing stations should be equipped to take care of one-third to one-half of the hourly casualty receiving capacity of the hospital to be served, the OCD recommends. The professional staff will consist of Mobile Medical Teams assigned when the station is activated, supplemented by additional attendants from the Emergency Medical Service. In addition to cleansing and emergency treatment, the staff of the gas cleansing station will assist in undressing the injured, moving stretchers, caring for clothing and valuables, maintaining supplies and dressing wounds.

It is recommended that cleansing stations be established at or near hospitals and casualty stations which they are to serve. Every hospital that may be required to handle an appreciable number of casualties should have access to such cleansing station facilities.

The local Chief of Emergency Medical Service is responsible for the development of these stations, with the advice of the Senior Gas Officer of the community.

FURTHER OBSERVATIONS ON THE TREATMENT OF ECLAMPSIA*

M. PIERCE RUCKER, M.D.,
Richmond, Virginia.

My choice of a subject may seem strange for a paper to be read in Boston, where a third of a century ago, Mrs. William Lowell Putnam started her prenatal clinics. I take my hat off to this great work. Following her lead I started two clinics in Richmond, and for several years sat around four afternoons a week waiting for patients. These clinics are now going concerns, but the treatment of eclampsia is still a major problem with us. Deaths from the toxemias of pregnancy lead all causes of maternal deaths in Virginia. If one reviews the treatment these women received, as I have had to do as chairman of the Maternal Health Committee of the Medical Society of Virginia, one is struck with the bizarre forms of treatment and over-treatment that prevail. It is very evident that there has been, and still is, a lot of bad obstetric teaching. And so, while you may have stopped having eclampsia in Boston, you still train medical men, and some of them will practice in the South. Therefore, a discussion of the treatment of eclampsia at this time is not as inappropriate as it may seem.

The father of Medicine[1] was not greatly interested in the treatment of eclampsia. In his Aphorisms (V:30) he says it proves fatal to a woman in a state of pregnancy, if she be seized with any of the acute diseases. Five hundred years later Galen interprets this to include epilepsy, apoplexy, spasm, and tetanus.

To the ancients, convulsions were convulsions, whether they occurred in men, women, or children. If they occurred in pregnancy, it was merely coincidental. To some, the pregnancy influenced the prognosis. For instance, Paulus Aegenata,[2] one of the Greeks who wrote wisely on obstetrics, in his chapter on epilepsy, has this to say, "It has also been seen to proceed from the uterus in females, at the time they were pregnant, for after delivery, it ceased." It is interesting that he, along with Pliny, and others, recommended hellebore, both black and white. The white hellebore is thought to be the same as veratrum alba.

It was not until the latter part of the 18th century, or the beginning of the 19th century, that eclampsia was considered to be a separate disease. According to Kosmak,[3] Bernhart,[4] and others,[5] Francois Boissier de la Croix de Sauvages was the first to use the word eclampsia to denote the convulsive form of the toxemias of pregnancy. Duget[6] says that Madame Lachapelle was the first author to consider eclampsia as a distinct morbid entity.

The treatment accorded these patients in the middle ages, as one would naturally expect, was "humoral" bleeding, purging and blistering. As the seat of the disease was thought to be in the head, the therapy was directed to that part of the body. Thus the temporal artery or the jugular vein was opened by preference. The head was shaved so that the cupping or blisters could be placed as near the source of the trouble as possible. In addition, they responded to the primitive urge to terminate pregnancy, just as we do today when confronted by an unusual condition in a pregnant woman. Some of us in the great influenza epidemic of 1918-19, for example, practiced abortion in order to save the woman from a death from pneumonia. We are not surprised therefore to learn that Guillemeau[7] in 1609 treated convulsions in pregnant women by podalic version and extraction, a new technic he had learned from his master Paré. On page 117 of the English translation he says, "And concerning convulsions, they are very dangerous: because the braine being hurt, it cannot affoord such store of spirits as are needful, for the respiration of the Mother, and the childe, who breathes onely by means of the spirits, that are imparted unto him by the arteries of his mother, which causeth him to be choked & stifled. Besides, the great convulsion, makes the Midrife, and the muscles of the upper belly, move so violently, that the childe is much shaken, and puts both him and his mother in danger to be stifled, and die. The mother and childe must be succoured without delay which shall be done by delivering her, and this ought to be done either by the help of a surgeon or else a very skillful midwife."

At a somewhat later date, Mauriceau[8] taught that when flooding is accompanied by faintings and con-

*Read before the Obstetrical Society of Boston, October 20, 1942.

vulsions, the woman is to be delivered at once by gently stretching the mouth of the womb with the fingers followed by internal podalic version and extraction.

As new antispasmodics, sedatives, and narcotics were discovered, they were tried out in the treatment of puerperal convulsions. Velpeau[9] says few if any such drugs have failed to be used at one time or another. The same can be said of many therapeutic technics, lumbar puncture,[10,11], decapsulation of the kidney,[12] etc. Thus de La Motte[13] in 1721 reported complete relief from the convulsions in one case and temporary relief in another followed his disengaging the fetal head so that the mother was able to empty a greatly distended bladder.

Opium was one of the first drugs used. It had its advocates and those who condemned its use. Alexander Hamilton[14] is frequently quoted as saying he never saw a patient recover to whom the drug was given early. Hamilton relied chiefly upon bleeding. If the woman were in labor, he ruptured the membranes and assisted the delivery whenever it were possible. Merriman[15] also was opposed to opium and favored forceps delivery after full dilatation. On the other hand, Denman[16] was in favor of giving opium freely and was opposed to artificial delivery. In more modern times G. Veit was the champion of morphine in Europe and McPherson[17] in this country. McPherson's plan was to give morphine until the respirations were reduced to 8 per minute. When this is done, the woman has no more convulsions.

Fleetwood Churchill[18] occupies a borderline position between the old and the new. He says, "The division should be made into the sthenic and asthenic. The latter should be bled cautiously. The main reliance in the asthenic cases must be counter-irritation to the head and neck, cold in moderation, calomel, opium and, I believe, upon anesthesia." Channing[19] had already used ether in 10 cases with the recovery of 6 mothers and Churchill cites reports of isolated cases of the use of chloroform in the *Lancet* and the *Edinburgh Monthly Journal*. And thus it went with the other sedatives, chloral, paraldehyde, the barbiturates, etc. Vignes,[20] in his address before the International Congress in Amsterdam in 1938, gives an excellent historical account of each drug and therapeutic procedure. In view of the recent work of Bryant and Fleming[21] it might be well to go into a little more detail about the history of veratrum viride. In discussing Jewett's paper[22] Fordyce Barker said that the drug was first prepared by Tully and Ives of Connecticut. Fordyce Barker introduced the drug into New York and used it extensively in fevers and various convulsive states, but did not use it in eclampsia. Baker,[23] of Eufaula, Alabama, like Barker, used the drug in a variety of conditions, both in adults and infants. He reports that he used it successfully in one case of postpartum eclampsia. He did not think it wise to use it in intrapartum eclampsia for fear the medicine would stop uterine contractions. Twelve years afterwards, in 1871, Fearn[24] reported ten cases treated with veratrum viride and several others treated by his colleagues. For some time after this report the treatment was known as the Brooklyn method. In 1887 Rushmore[25] collected 41 reports with a total of 85 cases treated in Kings County. There were 65 recoveries. In two cases the convulsions continued in spite of the veratrum viride. He was of the opinion that veratrum viride had little effect in reducing the mortality from eclampsia, and makes the statement that sounds curious to modern ears that the "modern reduction of maternal mortality from 30 per cent to 14 per cent is due to the substituting chloroform for indiscriminate bleeding". Jewett,[22] in the same year, is more enthusiastic about veratrum viride and says that if the pulse is reduced to below 60 per minute no further convulsions occur. Theophilus Parvin[26] was also an advocate of the use of veratrum viride, and Reed[27] mentions the fact that Parvin reported 284 cases treated with veratrum viride before the International Congress of Gynecologists at Geneva (1896) with a mortality of 8 per cent. Bacon,[28] a fellow townsman of Reed's in the same year, was of the opinion that the drug was of doubtful value. In the same year (1905) the treatment of eclampsia was discussed by the American Gynecological Society.[29] Kirkley was of the opinion that venesection was the best treatment but that veratrum viride was almost equally as good. Cragin[29] relied upon chloral, chloroform, veratrum viride and enemata. Zinke[30] gave Reamy the credit for introducing the remedy to Cincinnati. He concurs in Jewett's dictum that if the pulse rate be kept below 60 per minute, there will be no further convulsions. In 1917 Cragin[31] reported that in the preceding 10 years, he had reduced his maternal mortality from eclampsia from 28.3 per cent to 14.5 per cent. He

attributes this change to substituting ether for chloroform and to using less speed in terminating labor. He uses veratrum viride in place of venesection. Williams,[31] on the other hand, preferred bleeding. He ran a series of cases in which every other one was treated with veratrum viride and the results were not quite so good. The idea that veratrum viride was a substitute for bleeding was rather widespread. Moran,[32] who confesses that Zinke had converted him from radical treatment to the conservative plan, says that he does not use veratrum viride because he much prefers to bleed outwardly than inwardly. W. D. Porter[33] recommended veratrum viride as a prophylactic against convulsions. With Brammer's[11] report of the treatment of two cases, veratrum viride disappeared from American literature until Bryant's[34] first report in 1935. There have been two reports[35,36] in British literature and both were favorable.

About the beginning of the present century, many workers began combining a number of drugs and treatments according to a fixed schedule. The best known of these are the Stroganoff[37] and Rotunda[38] methods. The Stroganoff treatment has varied somewhat since it was first published in 1897. It consists principally of a sequence of morphine given hypodermically and chloral given by rectum. The importance of avoiding all sources of irritation of the patient is stressed—a darkened room, inhalations of chloroform before a hypodermic injection is given, etc., and, finally, oxygen inhalations during and after each convulsion. Recently he[39] has added the intravenous use of magnesium sulphate to his treatment. His maternal mortality varies from 6 per cent to 2 per cent. Zweifel,[40] an early convert to the Stroganoff treatment, combined with it a more liberal use of venesection than the author uses.

The Rotunda[38] method relies principally upon morphine, gastric lavage, purgation, and starvation. Tweedy, the originator of the treatment was convinced that the absorption of food, particularly of milk, from the intestinal tract was a contributing cause of the convulsions. He, therefore, stressed the importance of keeping the gastro-intestinal canal empty, and devised a special scheme of dieting, to be followed as the patient recovered from her convulsions.

These treatments and their various modifications gave such good results that a great many believed that it was no longer necessary to rapidly empty the uterus in antepartum and intrapartum eclampsia as had been the custom. Such treatments were grouped together under the head of conservative treatment. In the meantime great improvements in technique and anesthesia were taking place, and the believers in the radical treatment no longer resorted to accouchment forcé, Duhrssen's incisions and vaginal cesarean sections. They, in turn, could show impressively low mortality. And so the pendulum has swung back and forth with, in the main, constantly improving results. It is, therefore, quite important to know the date of the series when one compares results. It is obviously unfair to compare the 22 per cent mortality of cesarean section treated cases years ago at the New York Lying-In Hospital[17] with the 7.7 per cent at the Chicago Lying-In Hospital[41] at a more recent date.

To add to the statistical confusion, a third group follows the "middle line treatment", i. e., if the patient responds more or less promptly to the conservative treatment, so well and good, but if she does not, a section is done. Finally, there is a group,[42] as yet unnamed, who, if they see the patient within three hours of the first convulsion, terminate the pregnancy at once.

Dieckmann,[43] in his excellent monograph, has a table which shows the results of all the modern writers on the subject. The maternal mortality varies from 2 per cent to 40 per cent. In evaluating results one must know not only the size of the series and the date, which show in the table, but also whether the cases are antepartum, intrapartum, or postpartum, and whether they are seen early or late in the disease. Most series are small at best, and, if subdivided, have no statistical significance. No doubt Dr. Kellogg,[44] in his proposed central station for the study of toxemias, will solve this problem and there will be sizable groups of antepartum eclampsia treated by cesarean section under local anesthesia, for instance, to be compared with another sizable group treated by the Stroganoff method of the same date. But this problem will not be solved even then. There still will remain an intangible something that will escape the reports.

Last spring the President of the American Association of the History of Medicine, Dr. J. H. Elliott,[45] spoke of observation and interpretation, and cited as an illustration Cellini's account of his attack of

XUM

the French disease. After relating how he caught the disease and how he cured the secondary eruption by taking guaiacum, he goes on to say "Sometime afterwards I sought to mend my shattered health, and with that in view I betook myself to shooting when the winter came in. That amusement, however, led me to expose myself to wind and water, and to staying out in marshlands; so that, after a few days, I felt a hundred times more ill than I had been before. I put myself once more under doctor's orders, and attended to their directions, but grew always worse. When the fever fell upon me, I resolved on having recourse again to the wood; but the doctors forbade it, saying that if I took it with the fever on me I should have a week to live. However, I made up my mind to disobey their orders, observed the same diet as I had formerly adopted, and after drinking the decoction four days, was wholly rid of fever. My health improved enormously". . . . Dr. Elliott considers this a record of syphilis cured by fever therapy. Cellini's observation was good but his interpretation was erroneous. While I was listening to Dr. Elliott's address, I could not help thinking that if he had not wanted to use an illustration from literature, the treatment of eclampsia would have afforded him abundant examples.

Until its toxic effect upon the liver was discovered, chloroform was considered the remedy par excellence for puerperal convulsions. Rushmore,[25] for instance, considered the reduction of maternal mortality from 30 per cent to 14 per cent to be due to substituting chloroform for indiscriminate bleeding. We now believe the sodium ion to be bad for patients suffering from toxemia of pregnancy, but not so very long ago, normal salt solution was quite commonly employed. E. P. Davis, to cite one authority, in discussing Cragin's[31] paper, advocated venesection followed by salt or soda solution. Russell R. de Alvarez[46] treats toxemia of pregnancy by hydration, and Arnold[47] just as strongly advocates dehydration. And so it goes. What one generation thought was valuable, the next generation proves to be actually harmful.

When I was in medical school, I was taught that the eclamptic should be delivered by accouchement forcé as soon as you saw her. When this was impossible, a section was to be done. There was no doubt in my mind as to the proper treatment. While my record did not equal that of David's or Saul's, it was bad enough. And yet, because I was doing what I believed was the only right and proper thing, I went my way oblivious of the bad results. Later, when articles began to appear in the literature about the Dublin treatment and the Stroganoff treatment, I checked my results and was surprised to find that my maternal mortality was 31.6 per cent.[48] Of my 38 cases, accouchement forcé had been done nine times with four maternal deaths. Midforceps operation had been done five times without a preceding accouchement forcé with one maternal death. Six mothers had been delivered by cesarean section with two maternal deaths. My next 58 eclamptics were treated with morphine, venesection, gastric lavage and colonic irrigation. My maternal mortality was 25.9 per cent. Again, I was surprised. I tried to find out why these patients died. My experience corresponded in the main with that previously published by Parvin.[26] He says, "Death may occur from asphyxia, during a long tonic convulsion, but this is rare; the majority of patients die during coma by a 'slow asphyxia'. Others die from congestion or cerebral hemorrhage. Pulmonary edema is in many the cause; still others perish later from deglutition pneumonia. The eclamptic is more liable to post-partum hemorrhage and to puerperal accidents, and a number surviving the convulsions perish from puerperal infection." Except for anuria, this covers the situation. It is true that Herrmann[42] cites a case of a woman dying from striking her head on the bedpost during a convulsion. I, then, laid down certain principles to guide me in the treatment of eclampsia. They are: 1. Stop the convulsions. 2. Good nursing and rest. 3. Water and possibly intravenous glucose solution to promote kidney activity, and 4. Digitalis. The importance of stopping the convulsions needs no comment. Good nursing care is of prime importance, and this should include avoidance of external stimuli, such as bright lights, noise, jarring the bed. The nurse should be prepared to protect the tongue against injury during a convulsion. A towel or napkin rolled up like a bit and placed transversely between the teeth at the beginning of a convulsion is better than the various hard objects commonly used. Because I want the patient to get as much rest as possible, I am opposed to gastric lavage, colonic irrigation, purgatives and the various means that have been used to

XUM

produce sweating. The best way to give water is through the stomach. In this way the body has a defense mechanism against too much fluid, and there is less danger of overstraining the heart. If the patient is conscious, she is allowed to drink water or sweetened fruit juices whenever she wants to. If, on the other hand, the patient is unconscious, a nasal tube is slipped into the stomach and a pint of water is poured in every eight hours. In exceptional cases, when the urine is scanty or absent, the patient is given glucose solution intravenously. If edema is not marked, 500 or 1000 cc. of a 10 per cent solution is given slowly. In the presence of obvious edema, I prefer a small quantity of a 50 per cent solution. The digitalis is given for the sake of the heart. I have never seen pulmonary edema develop after this remedy has been used. I have been in the habit of giving an adequate dose as soon as possible, usually immediately after the medication for stopping the convulsion has been given. In case the patient already has pulmonary edema, venesection should be seriously considered. For years I had thought that digitalis in eclampsia was original with me, but Jacobs[49] says that Irish and Welsh folklore mentions foxglove not only against the evil eye and the influence of witches, but also as an external application against eclampsia. Quite recently I ran across a reference in Velpeau[9] that digitalis purpura was recommended by Hamilton in eclampsia if there is edema of the limbs.

As an example of what digitalis will do in some of these neglected cases, I would like to report briefly the following case: Mrs. W. J. S., aet. 20, was admitted to the Johnston-Willis Hospital, April 22, 1938, in deep coma. From the note of her physician and from her husband I obtained a fairly satisfactory history. There had been practically no prenatal care. When her ankles swelled a week or so before, the husband consulted his doctor, who asked for a specimen of urine. When it was obtained, it was found to be loaded with albumen. Before any treatment could be instituted, the patient went into labor. When she had a convulsion at noon, April 21st, her doctor delivered her with forceps under chloroform anesthesia. Two more convulsions followed in rapid succession. 20 cc. of a 10 per cent magnesium sulphate solution were given intravenously, also 2 capsules (6 grains) of sodium amytal by mouth. The convulsions stopped for a while, but returned in the night when the magnesium sulphate was repeated and sodium amytal was given by rectum. She had some 15 convulsions altogether, the last being at 1 P. M. April 22. She was admitted to the hospital at 7:30 P. M. cyanosed and in coma. Axillary temperature was 104.8, pulse 160, respirations 32, blood pressure 150/100. The pupils were small, equal, and fixed. The tongue was greatly swollen. There was no edema. Moderate coarse rales were heard over the entire back and there was dullness over the lower right back. The abdomen was flat, except for the hard rounded uterus that extended up to the navel. The patient looked extremely sick. An ampule of digifolin was given at once. A nasal tube was introduced and a pint of water and 3 drams of digitalis were poured into the stomach. Eight hours later the nasal tube was again introduced and the water repeated. This time the tube was left in place as it seemed not to disturb the patient. The patient was given fluids, glucose solution, and cream of tartar lemonade every 8 hours. On April 23, patient was given 50 cc. of a 50 per cent glucose solution intravenously. The sclera were markedly edematous and there was a tinge of jaundice. The patient voided in bed. There seemed to be no other change in her condition. In the afternoon the temperature dropped to 102 but the pulse remained 160. The blood pressure was 144/98. On April 24 the temperature became normal. The pulse rate dropped to 110 and the respirations, which had varied from 40 to 50 per minute, were 30. The patient showed some signs of lessening coma and the nasal tube was withdrawn. By the 27th—the fifth hospital day—she had become rational and was allowed a low protein diet. For the first time a specimen of urine was obtained. It was amber, cloudy, alkaline and contained a trace of albumen. The patient was discharged on April 29th.

Various other procedures may be useful at times. Wilson[10] and Snyder[10] have reported excellent results in small series of cases from lumbar puncture. I have tried it several times, but it has not been much help to me. I have had to give artificial respiration several times, but not since I have adopted the plan outlined above. Possibly I have not made enough use of oxygen. Nicodemus[50] has recently reported impressive results with oxygen-tent therapy in eclampsia. Oxygen forms part of the Stroganoff

XUM

treatment and was spoken well of by Newell[29] and by Bacon.[28] Years ago, before this present series, I used it in one case intraperitoneally with happy results. The patient when brought into St. Philip Hospital was comatose, and markedly cyanosed. Her temperature was 105 and brown frothy fluid was spewing from nostrils and mouth. Both lungs were so full of fluid that it seemed hopeless to give oxygen by inhalation. I introduced a trocar through the anterior abdominal wall and connected it with an oxygen tank. The gas was allowed to bubble through sterile water and through the trocar until the abdomen became tympanitic. Within five hours the cyanosis and pulmonary edema disappeared, the temperature became normal and the patient recovered.

In regard to my first principle, i. e., stopping convulsions, we have an efficient means in the intravenous administration of a 10 per cent solution of magnesium sulphate, as first advocated by Lazard.[51] Some years later, a second efficient remedy in the form of sodium amytal intravenously became available. Between the two we should be able to control the convulsions in every case. Of the two, I prefer the magnesium sulphate, as, when it stops the convulsions, it wakes the patient up, with the result that the course of the disease is easier to follow and the subsequent treatment of the patient is simpler. On the other hand, when the convulsions are controlled with sodium amytal, the patient is put to sleep and it is sometimes difficult to tell whether you are dealing with a comatose or a narcotized one.

My present series dates from the appearance of Lazard's first article in 1925. As a matter of fact, the journal came just as I was called to see a patient in consultation at the Memorial Hospital, and I took it along with me to read in my spare time. The patient did not respond to morphine, and her doctor and I decided to try this new treatment. The response was dramatic.

Since that time, I have had 143 cases of eclampsia, which I have treated more or less according to the principles outlined. These have been consecutive cases. All have had convulsions that were seen by competent medical men. Usually the diagnosis of eclampsia offers no difficulty, but not always. During this time, I have had three cases of convulsions that I did not consider to be eclampsia. One was a case of hysterical convulsions that began on the 8th day postpartum. There was no albuminuria nor elevation of blood pressure. The hysteria disappeared after the removal of an inflamed appendix. The second case was that of a colored woman who was admitted to St. Philip Hospital in convulsions. She was comatose between convulsions and no history could be obtained. The urine contained albumen and the blood pressure was elevated. There was a rounded abdominal mass that extended upward to a little above the navel. She was treated with magnesium sulphate solution intravenously. When she recovered consciousness, it was learned that she was over fifty years of age. The abdominal mass turned out to be a fibroid. As her kidney condition seemed to be the more urgent, she was transferred to medicine for further treatment. These two cases, of course, are not included. The third case was that of an epileptic. As this patient died, she is included to be on the safe side. The details of this case will be given under deaths.

My series now consist of 144 cases, many of which have been reported previously.[48] Some of these were on the out-patient service of the Medical College of Virginia: some were seen in the hospitals of the Medical College of Virginia, when I was on service in these hospitals, and some were private patients. Most of the latter were seen in consultation. Very few had received any prenatal care. At least 49 were severe, as graded by Eden's classification. Thirty-nine had convulsions before labor started, forty-seven had convulsions during labor, and in twenty-five the convulsions started after delivery. I am ashamed to say that in 33 cases I am unable to say whether the convulsion occurred before, during or after labor. The only notes I have kept of the student cases are in code, and my code did not cover this classification. Eighty-four were white and sixty were colored. Thirty-seven were unmarried. The youngest patient was 12 years, a white child. The youngest colored patient was 14 years. The oldest patient was 43 years of age and she was also a primipara. The average age was 23 years. Fifty-nine were in their teens; fifty-nine were in the third decade of life; twenty-two in the fourth decade, and three were above forty years of age. The extremes of the child-bearing period are better represented than in an average group of pregnancy patients. One hundred and seven of the 144 were primiparae. There were three sets of twins.

Seventy-three babies survived. The fate of ten babies is not known. This gives a survival rate of 53.3 per cent. Six mothers died, a maternal mortality of 4.16 per cent.

These deaths have been reported previously,[48] but I am repeating them at this time to show how hard it is to stick to one's principles.

No. 6474. Mrs. S. M., age 36, white multipara. Admitted 11-9-25, 5:30 A. M. Patient brought to the hospital in an unconscious condition. Had several convulsions before admission and several convulsions following admission. B. P. 240/140. Venesection 300 cc. Blood sugar 180 mg. Urea nitrogen = 22 mg., npn = 44. Urine, acid, sp. gr. 1021, albumin 4 plus, hyalin and granular casts. Treatment: Morphine gr. ½ to ¼ every 2 to 3 hours. High colonic irrigation. Venesection, delivery of 13½ lb. still-born male child. Patient died at 3 P. M. with evidence of pulmonary edema.

No. 6481. E. P., colored, age 36, married, admitted 6-11-26, multipara. History of convulsions and unconsciousness. Respiration labored. Evidence of pulmonary edema. B. P. 230/130. Patient had two convulsions after admission. Delivered still-born male 12 hours after admission. Wass. neg., Hb. 80 per cent, R. B. C. 4,550,000, Leucocytes 9,400. Polys. 64. Lymphocytes 36 per cent. Urine, acid, sp. gr. 1034, Albumen 3 plus, Acetone plus. Leucocytes plus, R. B. C. plus. Treatment: Morphine gr. ½ every 4 hours. Digitalone 1 cc. q. 4 hours. High colonic irrigations. Saline proctoclysis, caffeine and sodium benzoate gr. iii q. four hours, last twelve hours. Patient died 36 hours after admission.

No. 6508. Colored, primipara, age 33. She had no prenatal care. Blood Pressure was above 200 mm. of Hg. Her urine contained casts. Treatment consisted of intravenous magnesium sulphate, digitalis and rest. The delivery was spontaneous, the labor lasting forty-four hours. The baby, a female, was still-born. The mother died of pneumonia on the fourteenth day post-partum.

No. 6509. Colored primipara, 16 years of age. She had normal blood pressure and urine, and a rachitic pelvis. The convulsions were easily controlled. The patient went into labor several days later. After a trial labor of fifty-two hours, a cesarean section was done. The mother died of peritonitis on the third day.

No. 6566, white, primipara, age 21, admitted June 30, 1928, in convulsions. Her sister, who came with the patient, said that the patient had whooping cough at the age of 2 years and was paralyzed on the right side for five or six years afterwards. For the past five years she had been having convulsions, many of which were nocturnal. She had been under the care of a chiropractor and her pregnancy was said to have been normal. When she began to have convulsions she was brought to the hospital, a distance of ninety miles. The patient was having one convulsion after another. She was deeply cyanosed. Her pupils were pin point in size and fixed except just after a convulsion, when they were widely dilated. Pulse varied from 130 to 140, respiration 30 per minute. B. P. 100/80 except after a convulsion when the systolic pressure rose to 120 or 125 mm. of Hg. A thick yellow mucus was running out of her mouth and nostrils. There was an abdominal tumor that extended several finger-breadths above the navel. There was no urine in the bladder, although she was said not to have voided in the past 8 hours. Treatment consisted of 4 cc. of a 50 per cent magnesium sulphate solution intramuscularly, 60 cc. of the tincture of digitalis per nasal tube, 4 intravenous injections of a 10 per cent solution of magnesium sulphate, two intravenous doses of 20 cc. of 50 per cent glucose solution, a total of 2½ grains of morphine hypodermically, several doses of chloral and sodium bromide per rectum and a lumbar puncture which yielded a few drops of clear fluid. The patient died in convulsions twelve hours after admission to the hospital.

No. 7024. White, primipara, age 21. Admitted May 31, 1929, in convulsions, having been brought a distance of 50 miles after the convulsions had started. She had been under the care of a negro doctor, who had advised her the day before that she ought to go to the hospital. Her face, vulva, and feet were greatly swollen. B. P. 190/110. She had had 1 gr. of morphine before coming to the hospital. I gave her two intravenous injections of 20 and 15 cc. of a 10 per cent solution of magnesium sulphate, which had no effect upon the frequency of the convulsions. A lumbar puncture was done. The spinal fluid was cloudy and was under a pressure of 240 mm. of spinal fluid. Fifty mgm. of novocaine dissolved in the spinal fluid were injected. The blood pressure dropped to 165/120.

XUM

The patient had another convulsion and became very blue. As the cervix was about fully dilated, a version and extraction was done. After the delivery the blood pressure was 170/130. The convulsions continued in spite of two ¼ gr. doses of morphine, venesection (300 cc.) and intravenous glucose solution. The patient died in convulsions 2½ hours after delivery, and twelve hours after admission to the hospital.

To summarize, the first two patients who died were treated with colonic irrigation, and the first one received no digitalis. The third and fourth deaths were septic deaths after the eclampsia had been controlled. The fifth case was a known epileptic who was scarcely 34 weeks pregnant. Except for the anuria and the convulsions, she had no evidence of eclampsia. The last patient would probably have died, no matter what treatment had been used, but I wish I had been less energetic in my treatment.

I was quite proud of my results until June of 1940, when Bryant and Fleming reported 120 cases with only two maternal deaths, and these were due to bad obstetrics and not to eclampsia. In 1935 Bryant reported a maternal mortality of 9.9 percent. At that time, besides veratrum viride, he advocated sedatives, purgation, and alkalies in the form of sodium bicarbonate and sodium citrate. Now he depends more upon veratrum viride. He also gives 500 cc. of 20 per cent glucose solution every 6 hours until consciousness returns. He uses magnesium sulphate intramuscularly, routinely. He gives no sedatives except in extreme restlessness or in labor, and he now uses a salt free diet. He induces labor in antepartum eclampsia only after the patient has recovered from her eclampsia.

I was so much impressed with his second paper, that I went out to see Dr. Bryant at my first opportunity. I did not see him treat any patients, but I made rounds with him. His series has grown to 140 and he has lost no more mothers. Upon my return from Cincinnati, I added veratrum viride to my list of ways of controlling convulsions. I have tried it upon the only two cases of eclampsia that I have had since, and I have watched its use in a third case, that of a patient who was being treated by Dr. J. M. Whitfield, Jr. All three mothers recovered. One baby was lost, after a long tedious labor that was complicated by a constriction ring. My own experience with the drug is too limited to be worth anything, but it is the main reliance[21] of the men who have obtained the best results in the treatment of eclampsia and it is for that reason worth consideration.

SUMMARY

A bird's eye view of the treatment of puerperal convulsions through the years shows a general reduction of the mortality with increasing interest in the condition regardless of the manner of treatment. Modern treatment of eclampsia is divided into two main groups, the radical and the conservative, with several sub-groups in between. The radical treatment consists of terminating pregnancy as soon as possible. The conservatives, of whom I am one, believe that the eclampsia should be treated, and the pregnancy should be disregarded. If the patient is in labor, the labor should be conducted along obstetric principles, always bearing in mind that an eclamptic stands a general anesthetic badly, and is rather prone to infection. In antepartum eclampsia, no effort should be made to induce labor until the patient has recovered from the eclampsia and is putting out a good quantity of urine. I am in accord with McCord[54] who says that then all that is necessary to do is to rupture the membranes. One group of middle-grounders believes in treating the patient along conservative lines so long as she improves. They say that an occasional severe case that does not improve upon such treatment, had best be treated by terminating pregnancy. Another group terminates the pregnancy if it can be done within three hours of the first convulsion. Otherwise, they follow the conservative plan.

The prevention of eclampsia is not discussed, not because it is unimportant, for it is the most important aspect of the treatment of eclampsia. It was not discussed because, with the exception of the question of salt-free diet as advocated by Harding and Van Wyck, DeSnoo and others, there is such an unanimity of opinion that there is nothing to discuss. A series of 144 consecutive cases of eclampsia is presented. These patients were treated more or less in accordance with the following four principles: First, stop the convulsions with magnesium sulphate or sodium amytal intravenously; second, good nursing-care with emphasis upon rest for the patient; third, fluids by way of the gastro-intestinal tract, and, when anuria is threatened, glucose solu-

tion by vein; and fourth, digitalis. The uncorrected maternal mortality in this series was 4.17 per cent. Reference is made to another series[21] treated along the same lines, using veratrum viride to stop the convulsions, with an uncorrected maternal mortality of 1.6 per cent.

In conclusion, as I look over the efforts of our predecessors to cure puerperal convulsions, from the vantage of present day knowledge, I would criticize the blisters, cuppings, lavage, colonic irrigations and hypodermoclysis as being too annoying to the patient. Bleeding might be useful in rare cases but the danger of depleting the patient's resistance is great. Administration of fluids by vein carries the risk of overloading the right side of an already damaged heart. Dehydration is conducive to anuria, a much dreaded complication. Normal salt solutions contain the wrong kind of electrolyte, etc. In the not too distant future, when the cause of eclampsia will have been discovered, our successors will look upon our discussion tonight, if they deign to look at all, as a lot of nonsense. I hope they will at least give us credit for doing our best according to our present lights.

REFERENCES

1. Hippocrates: Genuine Works of Hippocrates. Translated from the Greek by Francis Adams. New York. William Wood & Co. No date.
2. Paulus, Aegineta: The Seven Books of Paulus Aegineta translated from the Greek Book iii, Sec. XIII. (By Francis Adams, London. 1844.)
3. Kosmak, George William: The Toxemias of Pregnancy. New York. D. Appleton & Co.
4. Bernhart, F.: *Wien. klin. Wchnschr.*, 52: 1009, 1939.
5. Migon, Adolphe: Histoire d'eclampsie puerperale. Paris Thesis, 1851.
   Spalding, A. B.: *American Journal of Obstetrics*, 75: 773, 1917.
6. Duguet, P.: Puerperal Eclampsia. Thesis. Bordeaux, 1889.
7. Guillimeau, James: London. Anne Griffin, 1635.
8. Mauriceau, Francis: The Accomplisht Midwife. Translated by Hugh Chamberlen. London. John Darby, 1673. Book I, Chapter 20.
9. Velpeau, A. L. M.: An Elementary Treatise on Midwifery. Philadelphia, 1838.
10. Wilson, W. T.: *Southwest J. M. and S.*, 261: 5, 1918.
    Snyder, J. W.: *J.A.M.A.*, 69: 1074, 1917.
11. Brammer, J. K.: *Therap. Gaz.*, 42: 690, 1918.
12. Edebohls, George M.: Tr. Am. Gyn. Soc., 28: 133, 1903.
13. De La Motte, Guillaume-Mauquest: Traité complet des accouchemens naturels, non-naturels et contre naturels. Paris, 1721.
14. Hamilton, Alexander: Outlines of the Theory and Practice of Midwifery. Edinburgh, 1785.
15. Merriman, Samuel: A Synopsis of the Various Kinds of Difficult Parturition. London, 1838.
16. Denman, Thomas: An Introduction to the Practice of Midwifery. London, 1801.
17. McPherson, Ros: *N. Y. State J. M.*, 18: 395, 1918.
    Am. J. Obst., 77: 58, 1918.
18. Churchill, Fleetwood: On the Diseases of Women. Philadelphia, 1857.
19. Channing, Walter: A Treatise on Etherization in Childbirth. Boston. 1848.
20. Vignes, Henri: Traitement de l'eclampsie. Leiden. No date.
21. Bryant, Richard D., and Fleming, John G.: *J.A.M.A.*, 115: 1333, 1940.
22. Jewett, Charles: Tr. Am. Gyn. Soc., 12: 319, 1887.
23. Baker, D.: *Southern Medical and Surgical Journal*, 15: 579, 1859.
24. Fearn, Herbert: *Am. J. Obst.*, 4: 28, 1871.
25. Rushmore, J. D.: *Gaillard's Medical Journal*, 45: 409, 1887.
26. Parvin, Theophilus: The Science and Art of Obstetrics. Philadelphia, 1895.
27. Reed, Charles B.: *Am. J. Obst.*, 51: 331, 1905.
28. Bacon, Charles S.: *Am. J. Obst.*, 51: 455, 1905.
29. Newell, Peterson, Harris, Kirkley and Cragin: *Am. J. Obst.*, 52: 428, 1905.
30. Zinke, E. Gustav: Tr. Am. Assn. Obst. and Gynec., 18: 264, 1905.
31. Cragin, Edwin B.: Tr. Am. Gyn. Soc., 42: 362, 1917.
32. Moran, John F.: Tr. Am. Assn. Obst., Gynec., and Abd. Surgeons, 34:105, 1921.
33. Porter, W. D.: *Lancet-Clinic*, 111: 746, 1914.
34. Bryant, R. D.: *Am. J. Obst. and Gynec.*, 30: 46, 1935.
35. Haultain, W. F. T.: *Edinburgh Med. Jour.*, 17: 416, 1916.
36. Stevens, T. G.: *J. Obst. and Gynec. Brit. Ent.*, 29: 426, 1922.
37. Stroganoff, W.: The Improved Prophylactic Method in the Treatment of Eclampsia. Edinburgh, E. and S. Livingstone, 1930.
38. Tweedy, Ernest Hastings, and Wrench, G. T.: Practical Obstetrics. London, 1919.
    Leighton, Adam P.: Tr. Am. Assn. Obst., Gynec., and Abd. Surgery, 27: 476, 1914.
39. Stroganoff, W., and Davidovitch, O.: *J. Obst. and Gynec. Brit. Emp.*, 44: 289, 1937.
40. Zweifel, P.: *Monatschr. f. Geburtsch u. Gynak.*, Berlin. 37: 1, 1913.
41. Greenhill: *J.A.M.A.*, 87: 240, 1926.
42. Herrmann, Edmund: Die Eklampsie. Wien, 1929.
43. Dieckmann, William J.: The Toxemias of Pregnancy, St. Louis, 1941.

XUM

44. Kellog, Foster: Tr. Am. Assn. Obst., Gynec., and Abd. Surg., 55: 1942.
45. Elliott, J. H.: *Bull. Hist. Med.*, 12: 137, 1942.
46. de Alvarez, Russell R.: *Am. J. Obst. and Gynec.*, 39: 476, 1940.
47. Arnold, J. O.: Med. Clin. of North America, 18: 297, 1934.
48. Rucker, M. P.: *Virginia Med. Month.*, 61: 384, 1934. *So. Med. and Surg.*, 93: 269, 1931. *J.A.M.A.*, 109, 1087, 1937.
49. Jacobs, Maurice S.: *Annals Med. Hist.*, 8: 492, 1936.
50. Nicodemus, Roy E.: *J.A.M.A.*, 117: 1238, 1941.
51. Lazard, E. M.: Tr. Am. Assn. Obst., Gynec., and Abd. Surgery, 42: 240, 1929.
52. Harding, V. J., and Van Wyck, H. B.: *Am. J. Obst. and Gynec.*, 10: 1, 1926.
53. de Snoo, K.: *Am. J. Obst. and Gynec.*, 34: 911, 1937.
54. McCord, J. A.: *Am. J. Obst. and Gynec.*, 38: 587, 1939.

Medical Arts Building.

A Report on the Incidence of the Common Cold.

(Based on Surveys Covering a Total of 85,000 Persons by the American Institute of Public Opinion, Princeton, N. J.)

The importance of the common cold as a public health problem in wartime has been widely recognized. Colds are the largest single source of lost man hours in war production.

A study by the American Institute of Public Opinion showed that of 3,200,000 man-days of work lost in war industries during the month November 24-December 20, 1941, the common cold accounted for one-half. Those lost man days would have built one heavy cruiser, 224 medium bombers, or 1,600 light tanks.

Because of the importance of the common cold as it affects the war effort, the Institute undertook a periodic check of the incidence throughout the United States, beginning in the fall of 1941.

Heretofore studies have been limited to selected groups, such as students, employees of various business concerns, and certain family groups. The Institute survey, on the other hand, covered a cross section of all segments of the total population, by geographical sections, income groups, size of family and age, during both summer and winter months. The study does not claim absolute accuracy since it had to rely on the layman's ability to recognize a cold.

The summary and principal conclusions show that the lowest incidence is between the ages of 20 and 29, and the highest under 10 years. The income was studied, and it was found that in the lower income groups, it was 60 per cent higher than those in higher income groups. The geographical distribution was found to be highest in the west central states where climatic changes are greatest and in the south. On the east and west coasts it was lower than the mid-west. One person in four went through the winter without a cold but even in mid-summer one person in every twenty was found to have a cold. February had the highest incidence, 18 per cent, while July was lowest with 5 per cent.

Incidence of colds by size of family. It might be expected that the larger family groups would be affected as result of contagion. This does not show up in the results; however, the income factor was equalized, with the following results. One person families—19 per cent were affected. Two to six persons, and larger families, showed 14 per cent.

Incidence by age groups:—Under 10 years, 7 to 28 per cent; 10 to 19 years, 4 to 18 per cent; 20 to 29 years, 5 to 13 per cent; (the lowest group); 30 to 49 years, 5 to 16 per cent; 50 years and over, 4 to 17 per cent.

Under additional findings, a question asked "was a doctor consulted?", indicated that about one-fourth of the families only had called a doctor. The same study was made in Canada with almost identical findings.

During the 1940 flu epidemic, it was shown by a study that it was more common in the south and west than in the eastern and east central states—here again the rural and small town population seemed to have suffered most. In the nation as a whole 25 per cent were affected, men 24 per cent and the women 27 per cent. Rural-urban ranged from 27 per cent farm residents to 20 per cent in cities over 10,000. The east central states showed 22 per cent while the south and far west showed 29 and 26 per cent respectively.

This study seems to have brought out some little known facts as to incidence, by various groups and localities, and seems worthwhile from a statistical point of view.

Abstracted by C. L. Outland, M.D.

VIRUS PNEUMONIA BY CONTRAST WITH OTHER TYPES*

JAMES H. SMITH, M.D.,
Richmond, Virginia.

About four years ago Reimann, of Philadelphia, reported eleven cases under the title: An Acute Infection of the Respiratory Tract with Atypical Pneumonia—A Disease Entity Probably Caused by a Filtrable Virus. He did not claim to be the first to observe the disease, but he was the first to bring it into the bedside consciousness of clinicians. It did not fit into any familiar picture; therefore it was atypical. Various names have been suggested for it, including several which were proposed but not adopted for the pneumonia of the influenza epidemic of nineteen-eighteen. Since it is plainly pneumonia, and since it is more and more certain that a virus is the cause, the name virus pneumonia has gained rapid and general acceptance. It is probably not the name to be given it finally, for influenza and psittacosis seem to be caused by a filtrable virus, so that to call it virus pneumonia distinguishes the condition as poorly as if one should speak of bacterial pneumonia. Regardless of the ultimate naming, virus pneumonia is an established entity. Indeed, during the past few months, in true American fashion, so well popularized has the term become that it has been quite common to hear such a diagnosis made when there is no sign of consolidation, no x-ray evidence of such a condition, nothing but a respiratory infection with fever.

Before the advent of this newcomer, therapeutic advances had led clinicians to think of pneumonia increasingly in terms of etiology. Since virus pneumonia presents therapeutic indications different from pneumonia of other etiology, a rough classification of the pneumonias on an etiological basis will be presented, and the clinical picture of virus pneumonia will be contrasted with previously recognized types. The series can be taken up somewhat in the order of their emergence as major problems in modern experience, that is, roughly, in historical sequence.

CLASSIFICATION OF PNEUMONIAS

1. Pneumococcic pneumonia.
2. Bacterial invasion of depleted lung tissue.
3. Streptococcic and staphylococcic complications of
   (a) Measles.
   (b) Influenza.
4. Pneumonia caused by Friedlander's bacillus, B. typhosus, B. tularense, etc.
5. Virus pneumonia.

In the early years of the present century the textbooks dealt with lobar pneumonia and lobular pneumonia, the former due to the pneumococcus and the latter to invasion of lung tissue by any one of a wide variety of bacteria, more especially in marasmic infants and in elderly people confined to bed from any cause. In the winter of 1917-18, following upon measles in camps, there developed a form of broncho-pneumonia complicated by empyema, known as the empyema epidemic. In the latter part of 1918 came the influenza epidemic with its "Flu pneumonia" that ravaged a large part of the globe. A hodge-podge group of pneumonias, some long known and others more recently identified, is awkwardly introduced into the classification, for the sake of completeness. The latest addition to the family of pneumonias is the virus type. In order to set off this condition by contrast, the older types will be considered in some detail.

1. Pneumococcic pneumonia is the disease which characteristically involves one or more lobes of the lungs, so much so that the term is used synonymously with lobar pneumonia. Its clinical features are too well known to require emphasis—the sudden onset, chill, high temperature, early high leucocyte count, rusty or prune-juice sputum, pneumococci in cultures, its well-defined consolidation, and its frequent decline by crisis. At autopsy it shows a massive pathology, converting the lung into solid tissue, like liver. It is an ancient enemy of mankind, prone to strike at the strong as quickly as at the weak. It is the form of pneumonia in which important therapeutic advances have been made, so that it has become important to recognize it, in order that available therapy will not be neglected.*

2. The old lobular pneumonia, often superimposed upon hypostatic congestion in debilitated in-

*Read before the Staff of the Medical College of Virginia Hospitals, March 11, 1943.

*The contrast in the therapy of pneumococcic and virus pneumonia is omitted from the present discussion, since it is covered in another article, "The Treatment of Pneumonia and Its Complications," to be published later.

XUM

dividuals, though of great importance because of its frequence and its high mortality, will be passed over without detailed discussion. It may result from any one of a wide variety of lurking bacterial invaders, ready to take advantage of lung tissue when resistance is enfeebled by any cause. The literature will be searched in vain in the effort to find any reliable clinician who has asserted that the sulfonamids have greatly influenced the course of this type of pneumonia.

3(a). Up to this point the discussion has concerned itself with types which present themselves in the routine of practice, without assuming the dramatic quality of an epidemic sweep. Under the head now to be considered conditions develop which are never forgotten by any physician who has encountered them. To use a phrase belonging to the military vocabulary, one knows that hell has broke loose. Take the matter of the empyema epidemic in the camps in this country during the First World War. In the discussion of a symposium built upon the ponderous report of the Empyema Commission, one of the speakers rose and spoke artlessly as follows. Said he, "I was at Camp Dodge from the beginning and saw this whole epidemic. We were going along smoothly until all at once we were thrown into a sort of a convulsion by an epidemic striking us. There was nothing important about pneumonia before this epidemic came on. It seemed that we had said everything about pneumonia, but we found that there was a great deal to say. We are classifying pneumonias. We have divided them into two classes. One is the old fashioned pneumococcus pneumonia and the other is the streptococcus pneumonia."

At Camp Lee the records, I believe, will show that the epidemic appeared on December 28, 1917. Strictly speaking, the term empyema epidemic is too narrow, for there was an underlying pneumonia, and the accumulation of a purulent fluid in the pleural cavities was merely a conspicuous feature of a larger picture. It was conspicuous in its incidence and it was conspicuous because it introduced surgical procedures into the treatment; therefore, the name.

The empyema epidemic was an affair of the camps. It spared the civilian population. At Camp Lee measles had prevailed in the fall, and there were new cases of measles developing when the empyema epidemic broke. There was a definite impression that the latter was related to the former, but it could not be said that in the individual the lung disease was a complication of or sequel to measles. The patient with empyema may or may not have had measles. Most of the cases studied by the Commission had not followed other acute infectious disease. Perhaps it would be right to say that, based upon measles, the streptococcus acquired a virulence of epidemic proportions.

The earlier cases were startlingly sudden in onset, and early death was an even more startling feature. With or without the prodromal symptoms of an acute respiratory infection, the patient with this type of broncho-pneumonia would go down with a chill and a pain in the chest. Dyspnea was marked and the cough distressing. Cyanosis was usual and sweats were heavy. The temperature was irregular, the pulse and respiration rapid. The observations of the Commission led them to the conclusion that the patient with a large pleural effusion was less miserable, though not less ill, than the patient with an extensive broncho-pneumonia and no effusion. In most of the cases there was a leucocytosis of from 12,000 to 32,000. A hemolytic streptococcus could usually be isolated from the sputum, pleural exudate, and other sources. While other organisms were sometimes recovered, the streptococcus was greatly predominant.

The postmortem findings were those of a lung pocked and canalized by pus clear out to the pleural covering. There was intense congestion of the trachea and an interstitial type of broncho-pneumonia, with marked tendency to abscess formation, often just beneath the pleura. The pleural exudate was a thin, muddy fluid, though it might be a gelatinous material from which pus could be squeezed. The Empyema Commission was not impressed with the liability to involvement of other serous membranes, but the postmortem examinations at Camp Lee did reveal in the earlier cases a large incidence of purulent pericarditis, and a considerable number of instances of peritonitis. The truth is, the Empyema Commission arrived at Camp Lee when the strain was off. The incidence was much less high and the severity lessened. The Commission claimed a very low mortality in the cases treated by itself, in comparison with the much higher mortality "in this camp previous to the commission's

control of the cases." They thought that this might have been due somewhat to a change of virulence of the organism—a thing that was unquestionably true —but they thought their improved results were due especially to a late rather than an early operation. No one is interested now in fighting World War One over again, but on the highest authority it can be stated that the Commission was informed when it arrived that this lesson had been learned through experience. The mortality of this epidemic at the various camps was reported at 30.2 per cent. At one camp it was 84 per cent of eighty-five cases. A most pertinent question is, what would have been the effect of the sulfonamid drugs?

3(b). Sometime in the summer of 1918 came a wave of disease that was to become known as the influenza epidemic, really the influenza pandemic. It arrived in different countries at different times, following a course from east to west. It affected civil and military populations alike. After a flurry of scattered cases of a disease that ran its febrile course in two or three days, regarded as influenza, cases began to arise that were obviously complicated by pneumonia, and in the severer cases it was equally obvious that it was no ordinary pneumonia.

During the fall of 1918 Base Hospital 45, located at Toul, France, received 3,965 cases diagnosed as influenza or pneumonia. On the basis of physical signs and x-ray studies it was possible to classify the broncho-pneumonia cases according to the degree of involvement of lung tissue. Small well-defined patches were termed discreet; widely distributed signs, chiefly rales, with no large areas of consolidation were called diffuse; widely distributed signs, usually bilateral, with massive areas of consolidation on one side or both, were called confluent. While there was of course no sharply dividing line between the varieties, once the patient was put to bed it was rare that one of the lesser lesions was transformed into a graver type. It was the confluent type which died. It became possible to predict with fair accuracy from the appearance of the patient at first sight, whether the outcome would be good or bad. Those with massive lesions had a peculiar livid and sallow mixture of color in the skin, and a respiratory rate of forty or more per minute. In a certain group of 65 cases (of which 12 were regarded as lobar pneumonia) 34 had a temperature over 104°. Generally, the pulse was slow in proportion to temperature. In about 50 per cent hemoptysis was recorded. It was a really bloody sputum. Leucocyte counts under 10,000 were obtained in 45 cases. A leucocytosis did not point to recovery in the confluent cases, and a low or normal count was not of bad prognostic import in the less massive involvements. The prognosis seemed to depend chiefly upon the extent of pulmonary involvement. Empyema developed in only four of the 65 cases. There was a marked discrepancy in the bacteriology of the sputum, blood, pleural exudate, and the lung at postmortem. The last gave consistent findings. In all 12 cases in which cultures were made from the lung tissue, a streptococcus was obtained, the hemolytic streptococcus in nine instances.

One hundred and three autopsies were done, with findings corresponding to those done in other places. They gave rise to such names as "hemorrhagic broncho-pneumonia," "hemorrhagic necrotizing broncho-pneumonia," and "hemorrhagic pneumonitis." They were bloody, beefy lungs, in a state of decomposition so great that at times, in the attempt to lift it from the thoracic cavity the hand of the pathologist would sink into the muck. Even the consolidated area was very moist and indefinite. It ran in irregular bands through the lung tissue. There was a marked tendency to necrosis and to the formation of abscesses from 1 to 5 cm. in diameter. The bronchi were filled with pus. The trachea was usually hyperemic only. The peribronchial lymph nodes were swollen, hemorrhagic, or might contain abscesses. The pleura might show more or less hemorrhage, and in some cases a thin, brownish-yellow pus developed. The mortality all over the world was likely to be in the neighborhood of 30 per cent. The treatment was symptomatic, and the important part was to get the patient at complete rest in bed. Again the pertinent question which no one has had the temerity to answer, what would have been the influence of the sulfonamid drugs. In the few scattered cases seen subsequently, having the clinical characteristics of influenzal pneumonia, the sulfonamids have not proved their efficacy. One writer, David Smith, has expressed a restrained optimism. In the winter of 1940-41 there was in some parts of the country a

XUM

considerable epidemic of influenza. In the Durham, North Carolina, area, as reported by David Smith, the predominating organism cultured from the throat was a hemolytic staphylococcus aureus. When there was a complicating pneumonia it was very similar to that in the influenza epidemic of nineteen-eighteen. So also was the pathology. The staphylococcus was easily recoverable from the lungs.

5. Omitting discussion of the rarer, bacillary group of pneumonias, virus pneumonia may be described in contrast to the types that have been considered. Following Reimann's report of several severe cases, Reimann and Havens wrote under the title: An Epidemic Disease of the Respiratory Tract. In January, 1939, an epidemic of a mild disease of the respiratory tract began in Philadelphia, and it reached the proportions of the most widespread epidemic the authors had known in many years. They believed it to be of the same nature as the eleven cases previously reported. Out of 813 persons at the Jefferson Medical College and Hospital, 407 had the infection. About 100 were ill enough to be admitted to the hospital, and 25 developed pneumonia. The authors state that the disease resembles epidemic influenza in many respects, but it is caused by a different agent.

In virus pneumonia the onset is usually insidious, the first point of contrast with all other types save only the lobular pneumonia of debilitated subjects. After several days of symptoms quite like those of influenza, malaise, headache, chilliness, pharyngitis and dry cough, there may be signs suggestive of pneumonia but they are not likely to be conclusive. One or more areas may present dullness or suppressed breath sounds, though rales are the most frequent early finding. They may be confined to one lobe or may be heard in several lobes simultaneously or in succession. Bronchial breathing, egophony, and frank dullness may develop. Naturally one would expect such areas to show abnormal x-ray shadows. They may, but they may not. The x-ray shadows may be in other areas. Characteristically they are of a soft, infiltrative type, single or multiple, occurring about the hilus and extending into the lower lung fields. When the apices are involved the picture may resemble tuberculosis. The lesions tend to be patchy. Positive x-ray findings usually antedate the physical signs but the reverse may be true.

There is a peculiar incoordination in the timing of things generally. The fever may have been present for some time before the physical signs appear, and the signs may persist long after the fever has disappeared. Cough may be dry, or, if productive, the sputum may be blood-streaked, not prune-juice, nor often frankly bloody. Fever may be high but it is remittent. It may be biphasic, that is, it may recur when it seemed to have gone. It declines by lysis. It may last from two to seventeen days as a rule, but sometimes much longer, forty or fifty days. In the earlier part of the attack the leucocyte count is not often above normal, but it tends to rise later. Counts as high as 20,000 have been observed. Blood cultures are sterile. There is a notable lack of serious complications. Pleuritic pains and empyema are not a feature. Jaundice, vomiting and diarrhea may occur. Occasionally there are symptoms of encephalitis. The treatment is largely supportive and symptomatic. The sulfonamids are not helpful. The mortality is definitely low.

The differential diagnosis is not always easy. One often wonders whether or not to give one of the sulfonamids. The leucocyte count is helpful in this decision, but it is not conclusive. It may not be elevated in pneumococcic pneumonia, whereas, as stated, it can be so in virus pneumonia. Generally speaking, though, leucocytosis in pneumonia may be thought of as an indication for the administration of sulfathiazole or sulfadiazine. If there is doubt, perhaps the best thing to do is to give it. After about two days, the attendant in a case of virus pneumonia is convinced that it is not doing any good.

At the time Englehardt and Wilen submitted their paper for publication, August 8, 1942, six cases of virus pneumonia had been autopsied and reported. The general pathological characteristics are essentially similar to the pneumonias occurring in other virus diseases, such as influenza, measles, psittacosis, and variola, before secondary infection supervenes. The tracheo-bronchial tree is congested. The lungs show moderate congestion and edema, with confluent areas of firm granular consolidation. Microscopically, there is a predominance of mononuclear cells, along with fibrin and red blood cells filling the bronchi and alveoli. Polymorphonuclear cells are scarce, as also are cocci. Arterial necrosis has been observed.

To summarize the impressions of virus pneu-

monia, it is like influenza but the onset is too slow. The patient is becoming sicker when he should be getting better. And yet, in many cases he is sicker on paper than he is in bed. He is a patient with pneumonia who looks as if he should get well. Physical signs are vague. They more often lag behind the x-ray evidence than otherwise. They not only appear late but they persist long. It is odd to see the leucocyte count rising when ordinarily it would be falling. The pleura rarely gives concern. If the diagnosis has been made with confidence there is comfort, even in the face of a relapse, in the knowledge of the low mortality. The question that must occur to everyone is this: Will secondary invaders continue to neglect this soil, and, in the event of invasion, will the sulfonamids be our allies in the fight?

REFERENCES

1. Reimann, H. A.: An Acute Infection of the Respiratory Tract with Atypical Pneumonia: A Disease Entity Probably Caused by a Filtrable Virus, *J.A.M.A.*, 111: 2377, December 24, 1938.
2. The Empyema Commission: Cases of Empyema at Camp Lee, Va., *J.A.M.A.*, 71: 366, August 3, 1918, and 443, August 10, 1918.
3. Smith, J. H.: Prognostic Factors in Pneumonia During the Influenza Epidemic, *Am. J. M. S., clix.*, 561, April, 1920.
4. Smith, D. T., and Menefee, Jr., E. E.: Epidemic Influenza in North Carolina (1941), Trans. Am. Clin. and Clim. Asso., 57: 74, 1941.
5. Reimann, H. A., and Havens, W. P.: An Epidemic Disease of the Respiratory Tract, *Arch. I. M.*, 65: 138, January, 1940.
6. Reimann, H. A., Havens, W. P., and Price, A. H.: Etiology of Atypical ("Virus") Pneumonias, with a Brief Résumé of Recent Discoveries, *Arch. I. M.*, 70: 513, October, 1942.
7. Engelhardt, H. T., and Wilen, C. J. W.: Virus Pneumonia, *So. M. J.*, 35: 973, November, 1942.
8. Riven, S. S., and Stern, E. A.: Virus Pneumonia, *So. M. J.*, 35: 976, November, 1942.
9. Goodrich, B. E., and Bradford, H. A.: The Recognition of Virus Type Pneumonia, *Am. J. M. S.*, 204: 163, August, 1942.

St. Luke's Hospital.

More Help for Milk-Allergic Patients.

Appetizing and nutritious recipes for using Mull-Soy in milk-free diets are now available in a new publication of Borden's Prescription Products Division. Already widely prescribed as a hypoallergenic substitute for milk in infant formulas, Mull-Soy is now proving equally useful in diets of older infants, children and adults who are allergic to milk.

Included in the new Mull-Soy recipe folder are numerous beverages, soups, and desserts, as well as directions for using Mull-Soy in place of milk or cream for cereals, coffee, mashed potatoes, etc. Each recipe has been carefully tested in the Borden Experimental Kitchen and checked for palatability, ease of preparation, and suitability for milk-free allergy diets.

These Mull-Soy recipe folders are designed for distribution by physicians to their patients. Any desired number of copies may be obtained by writing to Borden's Prescription Products Division, Department CB, 350 Madison Avenue, New York 17, N. Y.

ALCOHOL ABUSE A PUBLIC HEALTH PROBLEM*

HAVEN EMERSON, M.D.,
Professor Emeritus, Public Health Practice, College of Physicians and Surgeons,
Columbia University,
New York, New York.

Society has often lagged behind science both in the collective voluntary use of many available practical facts, well established and published in professional journals, and in the application of new knowledge to the formulation of policies useful only or best through sanctions made effective by civil government representative of majority opinion. We have long known more than we have put to use.

In few respects has the belated adoption of Science's contributions been more evident than in the long delay on the part of the laity, and in some respects of the physicians of the past half century, in accepting, and acting with consistent Social purpose upon the revolutionary contributions of medicine to the ascertained facts concerning the action of alcohol on man.

Let me use for illustration several episodes in the history of medicine, each marking a forward step in knowledge and no one or all of them accepted in the social or political sense as a basis for public policies or action.

In 1883 Prof. Oswald Schmiedeberg, of Strassbourg in Germany, father of the scientific use of medicaments, observed in the course of pharmacological studies of narcotic drugs that alcohol failed to meet the definition of a stimulant but under all conditions acted as a depressant, i.e., caused inferiority of performance. Wherever modern medicine is taught today, the facts first described and proved by the methods of experimental pharmacology, a new science in 1883, are so taught in this country and abroad that the use of alcohol to stimulate circulation, respiration, muscular action or the processes of digestion is no longer prescribed in our leading hospitals or by competent and informed physicians. Where used, it is to dull the mind and senses and lower the level of anxiety.

And yet society and its average man and woman assume the effects of alcohol to be stimulating, act accordingly, and suffer not only from lack of understanding but from the assumption that the alcohol user is a safe and responsible judge of whether his performance of body or mind is better with than without alcohol in the body.

In the same year, 1883, Prof. Emil Kraepelin, at Stuttgart, stated from his experience with patients brought to him as a psychiatrist that the various somatic or bodily manifestations of alcohol were due mainly, if not solely and exclusively, to the toxic and depressant effect of ingested alcohol upon the central nervous system, the brain and spinal cord. And yet today in a public way alcohol is extolled as an upbuilder of physical strength, of prowess in the arts, as a factor in the well-being of young and old, worker and playboy, and as a means of attaining and holding enviable social, public and commercial positions.

In 1903 Professor W. O. Atwater, of Wesleyan University, a physiologist with special interest in the caloric values of foodstuffs and in their disposition and use in the human body, observed that while alcohol was oxidized in the body the process of burning or production of energy did not follow the rules as observed for the meat, starch and fat elements of a usual diet, in that alcohol was not capable of storage in the body, but was burned at a constant rate until all was consumed, regardless of the need of the body at the time, or even in spite of the absence of any bodily demand for increased energy or heat production. Alcohol tends to lower the temperature of a person exposed to cold and raises the temperature of a person exposed to heat.

From Atwater's work and that of subsequent students of the metabolism of alcohol in the human body, it has become clear that while up to about one-sixth of the body's caloric needs can, in the absence of other source, be met by alcohol in the diet of men engaged in physical labor, as in agriculture, alcohol cannot be accepted as a food, because of its uncontrollable oxidation, its inacceptability by the body as a stored source of energy, its toxic effects, and the fact that, in the processes of growth, nutrition and repair of the body, the molecule of alcohol cannot

*Presented by invitation at Founder's Day Exercises of the Medical College of Virginia in Richmond, December 2, 1942.

be incorporated into the substance of any normal body tissues. And yet alcohol is used in place of foods, as if a safe source of body energy and under countless conditions as if an appropriate addition to the dietaries of old and young.

In 1918 there appeared from the Carnegie Institution in Washington the classical monograph by Dodge and Benedict on the Psychological Effects of Alcohol, presenting for the first time, and as the result of most meticulously controlled and objectively recorded tests, the effects of small doses of alcohol upon those reactions of the nerve and muscle mechanisms of our body which we speak of as reflex actions. These are automatic responses of the body such as we are endowed with or develop intentionally primarily to safeguard ourselves against a variety of threats of damage in our environment.

The substance of the lessons learned from some years of these intensive studies at the Nutrition Laboratory of the Carnegie Institution in Boston was that the use of these small amounts of alcohol by healthy persons, whether or not accustomed to the use of alcohol in beverage form, resulted in a delay in reaction times by from 5 to 10 per cent. The full significance of this modest fact was not perhaps generally recognized in the medical sciences until in 1924 another monographic publication from the Carnegie Institution appeared under the authorship of the experimental psychologist Prof. Walter L. Miles, now of Yale University, with the title of "Alcohol and Human Efficiency". Miles made his tests on persons of various ages and qualifications, using alcohol in doses comparable to the beer of 2.75 per cent alcohol content legislatively declared by our Congress to be non-intoxicating.

The substance of Miles' observations was similar to that of Benedict and Dodge but of a wider range. It appeared that not only in regard to reflex actions, but in mental processes involving attention, memory, discrimination and judgment, "non-intoxicating" doses of alcohol produced recognizable and measurable inferiority of human performance both physical and mental.

Is it not fair to say that society and government have so far failed to make known these several fundamental observations upon the effects of a widely used dietary drug in our country, in a way to make men, women and their children generally aware of the significance of these facts upon the conduct of their lives and upon the policies of civil government, and particularly of those branches of local, state and national government especially charged with educating the people and protecting their health?

Up to this point I have referred only to the effects of alcohol when used in so-called "non-intoxicating" doses, i.e., in amounts which when taken by the average healthy well-developed, well-nourished and nervously well-balanced adult human do not ordinarily produce obvious or socially significant interference with conduct or with the usual avocations of life.

This is not the time or place to remind you of the social, economic, medical and occupational hazards that follow commonly the abuse of alcohol in the ordinary sense of development of acute or chronic intoxication.

Let me, however, recall to you the fact that such abuse of alcohol causes an amount of acute and chronic illness directly and exclusively related to alcohol taken in excessive quantities or high concentrations, which costs more to our respective local and state governments for treatment of the sick with humane medical resources than is received by our Federal government in taxes upon the production and sale of alcoholic beverages.

Not only is this mass of sickness of great volume, but the deaths officially accepted as due to ethyl alcohol used as a beverage amount to more than all the deaths in our country from typhoid, paratyphoid and undulant fever combined, or from scarlet fever and diphtheria together, or from malaria, smallpox and poliomyelitis combined, being 1.9 per 100,000 for the U.S.A. as a whole in 1940, with rates ranging from 0.7 in Kansas and 0.8 in Arkansas to 19.0 in Nevada, with Washington State 4.2, Massachusetts 4.1, Washington, D.C. 3.9, Arizona 3.8, New York 3.1 and Virginia 3.0 among the highest. Furthermore, let me remind you that for every death recorded as due directly or primarily to the abuse of alcohol, there is another death equally attributable to alcohol but concealed under the certification of a cause of death more acceptable to the family and friends, and more consistent with the social, church or public position held by the deceased. The death-rate from alcoholism, acute and chronic, is an understatement of the loss of life from alcohol as the sole or a major contributing factor.

The title of my talk assumes that beverage alcohol is abused, and I submit that this is a reasonable

XUM

assumption whether we refer only to those whose use results in lowered resistance to infection, to severe deprivations of a nutritional character, to acute intoxication requiring emergency and relatively short but repeated medical care, or to that 10 per cent of all admissions to hospitals for mental disease who have become chronically ill and unable to share in the privileges or opportunities of free members of society. I am inclined to go further and say that there is alcohol abuse when people allow themselves an inferiority of performance and ability to work, or of lowered capacity for responsibility at times like these, from the consumption of alcohol which does not reveal itself in overt acts offensive to public order or private customs of life, but which renders them less efficient whether driving a car or an aeroplane, working at a lathe or adding machine, or directing the work or discipline of others. Such abuse is not that of the drunkard, or of the acute or chronic alcoholic, but by the men or women who drink as they believe in moderation but sufficiently to lower their level of performance below what they are capable of at their best.

Is this a problem for public health? Public health services consist of the application of the sciences and arts of preventive medicine through government for social ends. Any factor of a preventable nature which affects many individuals of a population, and is susceptible of correction by education and by public or social action at the taxpayers' expense to reduce sickness and postpone the event of death, is a public health problem.

Alcohol abuse contributes heavily to the acquisition of syphilis and gonorrhea through extra-marital relationships, and, with prostitution, constitutes a pair of factors more seriously menacing the integrity of our war effort of men and women in uniform and in industry than any other factor related to communicable and preventable disease.

That alcohol use and abuse have been recognized as a problem of the public health is apparent from the record of the Massachusetts State Board of Health and of the Department of Health of the City of New York.

I quote the following from the official *Weekly Bulletin* of the Department of Health of the City of New York of February 19, 1916:

In the Act of 1869 by which the State Board of Health of Massachusetts was established, the Board was specifically directed:

"To examine into the effect of the use of intoxicating liquor as a beverage, on the industry, prosperity, happiness, health, and lives of the citizens of the State; and also, what additional legislation, if any, is necessary in the premises.

"On June 29, 1915, at the request of Dr. Goldwater, then the Commissioner of Health, a committee of leading physicians, actuaries, educators, publicists, and others interested in the alcohol question, met to advise with the officers of the health department as to the most effective method of preventing such disease as alcohol causes or to which it contributes.

"The opinions expressed by the committee and the information in the hands of the department of health, as to the part played by alcohol in causing sickness and death, justified the entrance of the Department of Health into a field previously occupied chiefly by moralists rather than physicians.

"Just as the control of venereal disease is a technical matter rather than a question of individual or community morals, so the knowledge of the serious effects of the use of alcohol is to be spread by education. As a measure of personal health and public preparedness against preventable disease and disability, this question should be approached from the medical and social point of view and not from that of morality and religion.

"Admitting that the drunkard is a social misfit, our interest is rather with those users of alcohol who do not become irresponsible or guilty of antisocial acts. Such individuals are almost always ignorant of the fact that alcohol decreases resistance to infectious diseases, such as tuberculosis and pneumonia. Alcohol is a depressant and not a stimulant; it drugs the brain and drops the capacity of the nervous system to obey the will. In this way the use of alcohol becomes an important factor in industrial accidents. Entirely aside from its action as a contributory cause in infectious diseases and industrial accidents, the intemperate or continued use of alcohol causes well recognized degenerative diseases.

"The Department of Health has no sympathy with and will take no part in legislative or police restrictions or attempts to limit personal liberty in the use of alcoholic beverages. The spread of accurate information among the people as to the effects of alcohol can be depended upon to accomplish more than laws restricting its manufacture or sale.

"In the long run, compulsory prohibition will not prohibit until the public is ready to cease using alcohol, at which time restrictive laws will be superfluous."

In view of the events of the past twenty years in the United States there is something almost prophetic in this official statement of twenty-six years ago.

At the Washington meeting of the American Public Health Association in 1917 and at the Cincinnati meeting in 1926 I ventured to present what I believed to be some of the reasons why the beverage use of alcohol should be considered a major problem of public health. In this opinion I had the sup-

port of that great educator, President Eliot of Harvard, and such health authorities as Sir Arthur Newsholme and Sir George Newman of England, the chief medical officers of the Board of Education and of the University of Health. For these and other perhaps more compelling reasons of evidence and conviction I take this present opportunity to emphasize the importance of a rational scientific attitude toward the use of alcoholic drinks which I believe should be formulated and expressed by the official health agencies of this country. This appears to me of particular importance at this time, now that we have returned to practically unlimited accessibility of alcohol of all strengths to all persons willing and with the money to buy. May I further emphasize the advisability of having any attitude or formulation of public policy, or efforts to educate the general public, in the actual and potential dangers of beverage alcohol, established by public and official rather than by volunteer or private health agencies.

It is not that I would draw a distinction between the Women's Christian Temperance Union or the Anti-Saloon League and the educational obligations of health departments, but rather to call your attention to the non-performance, the paralysis of interest, the consistent and well sustained aphasia of every unofficial national health agency on the subject of alcohol from the date of passage of the Eighteenth Amendment. The public of the United States cannot trust its nonofficial health agencies to guide them in the implications of alcohol as a cause of preventable disease and death in the face of powerful commercial selfishness, or when a particular health topic runs counter to the advertising interests of the public press.

It must be recalled that no one of the always influential and usually generously supported volunteer agencies composing the National Health Council has uttered a word of warning, contributed any substantial information or advice as to health implications of alcohol use, or published a report of new facts and observations of a scientific nature on the subject of beverage alcohol or its effect on human life, since 1920.

Plainly, if and when conviction that alcohol constitutes a health hazard, more directly under man's own control to prevent than any other of equal significance, and determination to describe its effects in terms of sickness and death are arrived at among professional health workers, it must be to public health officers supported by the taxpayers, not to the private agencies sensitive to the wishes of a subscribing clientele that we must look for initiative and courage.

What Schmiedeberg and Kraeplin taught in 1883, what Cushny and Bastedo have written and described since 1900, what Benedict, Dodge and Miles have disclosed with exquisite experimental exactness will be found accurately written in Emil Bogen's school book for the Department of Education of Los Angeles, What About Alcohol. It were a pity that in this respect the public's physician, the health officer who speaks from the highest pulpit of health publicity, should act as if less well informed than the school child.

I believe there can be no better time than the present, when the very life of our nation is threatened by armed aggression to be overcome, we believe, by forces superior in quantity and quality, to make known to all people that the use of alcohol to any extent that causes inferiority of performance, of will power, of judgment, is not only unintelligent and harmful to the national effort, but an evidence of ignorance. To be afraid of ignorance is, I think, the only fear worthy of free men.

It is my belief that the evidences of the harmful effects of alcohol upon the individual and society are sufficiently abundant and precise to warrant the insistence by any community, whether local or state, that their department and officer of public health present the facts to the public through all suitable channels, and make available for public consideration and action all reliable information as to the preventable character of alcoholism, its wastefulness of life and material resources.

I venture to claim that no competent body of physicians in this or any other state of the Union can offer convincing evidence that beverage alcohol is essential for healthy persons at any age, or that its use by such persons improves the level of their health or prevents disease.

I ask you to accept my thesis that alcohol as used, and wherever abused, has created a problem properly included in a modern program of public health protection in our day and generation. Neither the private nor the public practitioners of preventive medicine can escape responsibility for initiative and

XUM

courageous leadership in this matter.

There have been instances of public health leadership as that referred to in New York City and by the late Dr. George Parrish in the Los Angeles City Department of Health, by the Alcohol Control Board of New York State, by the Assembly of the Commonwealth of Virginia, by the Liquor Control Board of Great Britain, and by the State Department of Education of Florida. There are six teachers' training institutions which offer courses in alcohol education.

In spite of the fact that alcoholic beverages are and may be used by some adults with well developed and well nourished bodies and stable nervous systems, under such conditions of time and circumstance, the amount and strength that direct acute and chronic disturbance of health is not generally recognized, all such users suffer at least temporary inferiority of mental and physical performance because of the toxic depressant properties of alcohol. Any evidence of assumed improvement in conduct or health as the result of beverage use of alcohol is but an expression of self-deception made possible by the lack of judgment and responsibility, characteristic of early results of the use of alcohol. Personally I believe there is so much more to be given to and taken out of life by a body and mind, by thought, action and emotions unaffected by any drugs, that I advise abstinence from alcohol, and believe its use should be discouraged by personal example and by an educated public opinion.

I understand that public action by your Governor and Legislature is under consideration for the purpose of providing humane skilled medical care for men and women so diseased by and addicted to the habitual use of alcohol as to need prolonged institutional hospital care. With such a purpose, all people of good will can feel in agreement and yet deplore its necessity.

We would never have reduced typhoid and diphtheria to the vanishing point if we had devoted ourselves chiefly or solely to hospital care of the sick.

Let me offer the quite unsolicited suggestion that for every dollar spent on medical care of those who have abused alcohol and their own health at least an equal sum be devoted to the widespread persistent and truthful teaching of the effects of alcoholic beverages upon health and human behavior by the appropriate state and local departments of health and of education.

600 West 168th Street.

Any Physician May Exhibit "When Bobby Goes to School" to the Public.

Under the rules laid down by the American Academy of Pediatrics, their educational-to-the public film, "When Bobby Goes to School", may be exhibited to the public by any licensed physician in the United States.

All that is required is that he obtain the endorsement by any officer of his county medical society. Endorsement blanks for this purpose may be obtained on application to the distributor, Mead Johnson & Company, Evansville, Indiana.

Such endorsement, however, is not required for showings by licensed physicians to medical groups for the purpose of familiarizing them with the message of the film in advance of public showings in the community.

"When Bobby Goes to School" is a 16-mm. sound film, free from advertising, dealing with the health appraisal of the school child, and may be borrowed without charge or obligation on application to the distributor, Mead Johnson & Company, Evansville, Indiana.

XUM

THERAPY OF MENINGITIS

JAMES B. S. PERROW, M.D.,
Lynchburg, Virginia.

History.—Before the introduction of spinal punctures, medical treatment of all forms of meningitis was practically nil. Little was known of the various organisms and forms of meningitis and, as might be expected, the mortality was 100 per cent except for a rare case which chanced to make a spontaneous recovery.

About the beginning of the twentieth century, Quincke introduced the spinal puncture. This was the first step toward the treatment of meningitis and this formed the basis of all future therapy for the next forty years. Following the introduction of the spinal puncture, examination of the spinal fluid began and developed into our present knowledge of causative organisms and the reaction of the meninges when invaded by them. Antiserums were not developed until 1906, and in 1907 the first extensive use of antisera began. Following this, the therapy of meningitis developed into a regime of repeated spinal punctures with the administration of antiserum into the meningeal spaces in order to bring the serum into direct contact with the organisms. The frequency of spinal puncture and giving of serum varied from once every six hours to once a day or less often. The more ambitious the physician and the more time he had to devote to the patient, the more serum that could be provided, the more often were spinal punctures done and serum administered. During the thirty-five years following antiserum use, mortality rates fell notably but still ranged from 50 to 95 per cent, even with the best treatment as accepted then and an ample supply of antiserum. Various reasons were advanced for failure of better response. In general, the impression was one of a time consuming, expensive procedure, the results of which were uncertain and unsatisfactory. For meningitis caused by organisms other than the meningococcus the mortality was still 100 per cent and treatment limited to a diagnostic spinal puncture.

The second great step forward toward more successful and rational therapy began in 1933 when Hayne made the first clinical trial of the antitoxin developed by Ferry, one year previously, from the meningococcus. Prior to this, for ten or eleven years, serum had at times been administered intravenously, usually when for one reason or another intraspinal administration could not or was not carried out. Intravenous administration was done more as a therapeutic gesture than with the idea of real benefit being obtained from it. Gradually the general impression was created that those patients who received intravenous therapy did better than those who did not. At the time this was realized antitoxin was developed. Such an easy method of administration as compared with intraspinal administration caused an early inclination to use this method more but physicians still clung more or less to intraspinal treatment until about 1935 and 1936. At that time, it began to be definitely accepted that intravenous therapy was superior to intraspinal therapy, that the mortality was less, that end results in patients who did recover were better, and that therapy was more easily carried out. It was not, however, accepted to the extent that all physicians gave up intraspinal therapy except in some of the more advanced clinics. Indeed, it has not yet been accepted by half, if not the majority, of physicians to the extent that they are willing to discontinue intraspinal therapy. Both antitoxin and antiserum are being used more and more intravenously, one giving about as good results as the other.

In the past seven years, chemotherapy has been developed until at the present time it largely replaces the use of serums and antitoxins. Only in the last two years, however, has the intravenous use of soluble forms of the sulfonamide drugs begun to be used. Even now, they are used only when the patient is moribund and cannot take drugs orally. These drugs are not only active against meningococci but against many other kinds of meningitis as well. The present status of the therapy of meningitis is uncertain but seems to be revolving about the question of chemotherapy and method of administration. In my own mind there is no doubt about which procedure is best. Three cases are now presented:

Case 1. Bobby C., age 3, admitted to Lynchburg General Hospital 11-23-41. Present illness began about one week before when patient had a severe cold with fever. Was seen by L.M.D. who

XUM

prescribed some "white tablets" which lasted two days. Child seemed to do better while taking the tablets but after several days became worse. Three days ago became drowsy, patient complained when moved and acted as if neck hurt when his head was moved. He was then seen by another doctor who put the patient back on the tablets and sent him to the hospital.

Past and family history negative.

Physical examination showed a well nourished and developed negro male, acutely ill. All findings negative except as follows: child was definitely drowsy but irritable when disturbed or aroused. The neck was not stiff but acute flexion caused the child to cry out. Kernig caused some complaint but was not definitely positive. Reflexes present and normal. There was a right otitis media and nasal discharge.

Course in hospital: Due to lack of definite findings, meningitis was suspected but spinal puncture postponed for a few hours. Right ear opened and thick pus flowed out. Sulfathiazole was started orally. The following morning, findings were more definite and spinal puncture showed cloudy fluid containing influenza bacilli. Sulfathiazole was changed to sulfapyridine. Child admitted on 11-23-41 and on 11-25-41 administration of influenza serum was begun intraspinally and intravenously. Serum was given intraspinally on 11-27-41 and 12-2-41, but no further intravenous therapy was given. There was a temporary improvement after the first administration but following this the spinal fluid became very thick, stupor increased and patient gradually became worse. Cisternal puncture on 12-16-41 showed spinal fluid too thick to flow but two cc. were aspirated. Died 12-19-41.

Comment. This patient presented the usual course of influenzal meningitis: inadequate serum therapy was due to difficulty in obtaining serum and to the cost. A terminal outcome in nearly all cases is to be expected. It is notable that improvement followed the single intravenous serum administration.

Case 2. Velma N., age 2 months, admitted to Lynchburg General Hospital, 12-4-41, with complaint of fretfulness, diarrhea, and fever. On physical examination no definite diagnosis could be made. Dysentery was suspected because of the history. Patient was therefore put on sulfaguanidine and routine dysentery treatment. Temperature remained elevated and child failed to improve. Re-examination on 12-5-41 showed slight stiffness of the neck which led to the suspicion of meningitis. Pneumonia was also suspected because of respiration. Sulfaguanidine was therefore discontinued and sulfathiazole begun. Re-examination on 12-6-41 showed marked stiffness of the neck. Spinal puncture showed purulent fluid loaded with pneumococci. Because of the ability to obtain higher concentrations of sulfapyridine than sulfathiazole in spinal fluid, sulfapyridine was begun orally. Child became rapidly worse and died 12-7-41 (24 hours after beginning sulfapyridine).

Comment. This child was a difficult problem. A very small, chunky infant who had been seen in the clinic many times, always held her neck more or less stiff so that diagnosis of increasing stiffness was unusually difficult. Consequently, there was some delay in doing a spinal puncture. Even so, the course was unusually short and, indeed, the child died very suddenly and unexpectedly.

No intravenous medication was attempted and probably could not have been accomplished without cutting down on a vein.

Case 3. Herbert W., age 11 years. Onset of present illness was two days before admission, with cold, sore throat and left earache. Few hours before admission he became unconscious and was in this condition when sent to the Lynchburg Hospital.

Patient admitted on 12-5-41, unconscious, jerking about and difficult to control, temperature 104. On physical examination, diagnosis of meningitis and left otitis media was made. Left ear opened. Spinal puncture showed cloudy fluid containing streptococci. Intravenous administration of sodium sulfapyridine was begun at once together with sedatives and infusions. Sulfapyridine was administered every twelve hours for five doses, and at the end of that time child was rational and taking oral medication and nourishment well. Complete recovery was uneventful and he was discharged on 12-21-41.

Comment. This is at least one patient who formerly would certainly have died. The fact that this patient could be given no oral medication forced the administration intravenously. Only two spinal punctures were done—the first diagnostic, the second to follow response.

SUMMARY

A brief history of the therapy of meningitis has been outlined. Three cases, each of a different type

of meningitis, have been presented, each having predominantly a different method of treatment.

COMMENT

It is believed that further improvement in the treatment of the various forms of meningitis lies in administering large amounts of medication intravenously and that dependence upon oral therapy should no longer be accepted. While it is nice to be able to follow blood concentration of various drugs, it is not necessary nor reasonable in all cases such as small infants or where facilities for determinations are not available. Meningitis ordinarily responds rapidly to treatment if response is going to occur, and this should serve as the principal guide to therapy.

1512 Clinton Street.

Doctors' Households Urged to Set An Example in Waste Fat Salvage.

The importance of saving waste household fats in order to salvage their glycerine content should be apparent to every physician. The doctor's kitchen, like that of every other family in town, can supply at least a tablespoonful of fat a day—from meat drippings, from rendered trimmings or fat skimmed from the soup kettle and no longer good for food. If that much were retrieved in every household and taken to the meat stores which collect the fat for the renderers, the amount saved would exceed the national goal of 200,000,000 pounds for 1943.

Why must we go to this trouble, in a land where more than a billion pounds of fat used to be wasted every year down the kitchen drain or into the garbage can? Because glycerin is desperately needed to feed the United Nations war machine, and because many of America's outside sources of fats and oils have been cut off by the war.

Glycerine is indispensable in the manufacture of munitions, because it is the source of both nitroglycerin and dynamite, the first of which provides the explosives for propellants, and the second the means of military demolition. Tanks, ships and planes last longer because of paints containing glycerine. It is used as an anti-icing fluid for the propellors of fighter and bomber planes. The shock absorbers of jeeps and halftracks, the recoil mechanisms of big guns and the firing mechanisms of depth bombs all contain glycerin.

Glycerin has an important place on the medical front, too, in both war and peace. It is one of the best known and widely used medical materials. There is scarcely a branch of therapeutics in which glycerin does not play a part. An average of more than three pounds of glycerine per hospital bed per year is used in our American hospitals. And an analysis of 15,063 prescriptions made prior to the war in a single American city showed that, with the sole exception of water, glycerine was the most-used liquid ingredient.

In military medicine the role of glycerine continues to grow. Even before we entered the war, large quantities of glycerine were shipped by the American Red Cross to England. In the requests made to organized medical groups in the United States for medical supplies, British authorities rated glycerine as equal in importance to surgical instruments.

Practically all the liquid sulfonamides call for glycerine. The war has given increased emphasis also to the long-established value of glycerine itself in burn therapy and surgical treatment, as well as for wound dressings. Dressings can be changed with less discomfort to the patient when they are soaked with glycerine.

The War Production Board is urging all Americans everywhere to help save the fat from which this precious liquid is made. The meat dealer from whom you purchase food will be glad to pay the prevailing rate for the kitchen fats YOUR household conserves. The pennies will buy War Stamps—and every pound of waste cooking fats turned in will provide enough glycerine to make a half-pound of dynamite or four 37-mm. anti-aircraft shells, or their equivalents in other badly-needed materials. Doctors, set an example in your community: start YOUR household saving waste kitchen fat today!

XUM

PELVIC APPENDICITIS*

LEROY SMITH, M.D.,
Richmond, Virginia.

The incidence of four cases of acute pelvic appendicitis during two weeks is unusual. Yet this happened at St. Elizabeth's Hospital during the first two weeks of February. As the symptoms and physical findings of such cases are quite different from the usual type of appendicitis, the correct diagnosis may be overlooked and may be confused with so-called intestinal grippe, stone in the lower ureter, ruptured ovarian follicle, or a lesion in the female pelvis. In pelvic appendicitis there is a frequent tendency to early rupture and to rapid spread of peritonitis. It is for this reason that these four cases which have occurred in such a short time may be of special interest as to diagnosis. Two of these cases were operated upon by Dr. J. Shelton Horsley and two by me.

The term pelvic appendicitis is applied to those inflamed appendices found wholly or in part below the brim of the pelvis. The symptoms are rarely those so frequently associated with abdominal appendiceal inflammation. The patient's first symptom is that of almost constant pain which has its origin in the epigastrium or above the umbilicus. In a few hours the pain usually radiates to the lower abdomen and here it may be localized in either quadrant or in the midline. In a larger series of reported cases the pain is often on the left side or just above the pubic region. Vomiting and diarrhea may or may not occur. Upon questioning the patient, however, there is usually found one symptom not associated with the more common types of appendiceal pathology. This is frequency of urination or in some cases the desire to defecate. The physical findings are most unusual, and while the history makes a diagnosis of appendicitis seem possible, on examination a more conflicting picture is presented. The abdomen is generally relaxed unless there is a definite peritonitis. Upon moderate pressure usually no tenderness can be noted except a generalized lower abdominal soreness. There is no localization of pain or rebound tenderness. Rectal examination is all important and it is here we find tenderness on pressure over the cul-de-sac in the midline or right side, and often a definite tender mass can be palpated. Repeated rectal examinations are frequently necessary to establish an early diagnosis of this disease. When the appendix ruptures, there is a sudden change in the clinical picture, with peritonitis, spasm and tenderness over the entire lower abdomen. As a usual rule, the temperature is found to be normal or elevated possibly one degree. The laboratory findings reveal in most cases a white blood count from 10,000 to 20,000 with an increase in the poly. count, usually between 80 and 90 per cent.

Generally there are two outstanding diseases to be considered before definitely making a diagnosis. (1) In a rupture of an ovarian follicle, there may be symptoms in the lower abdomen, but on examination the ovary on that side usually reveals marked tenderness. If an elevation of the white blood count occurs, it is usually later. (2) A few cases of stones in the lower ureter may simulate this condition, but the urine often shows red blood cells and on rectal examination no masses or points of tenderness can be felt.

The following four cases of pelvic appendicitis have recently occurred on the surgical service at St. Elizabeth's Hospital:

Case 1. Miss R. N. J., age 19, was admitted to St. Elizabeth's Hospital on February 9, 1943. She gave a history of severe cramp-like pain in the epigastrium twenty-four hours prior to admission. It was almost continuous for the first twelve hours, then the pain subsided. She vomited. The pain radiated into the lower abdomen. Ten hours before admission she began menstruating and the pain became worse. There was no history of previous irregularity of the menstrual periods. Since the onset of symptoms, there was a desire to defecate although the bowels moved only once. Examination at the time of admission revealed the abdomen to be slightly tender in both lower quadrants, more marked in the midline. There was a slight increase in spasm over the right iliac crest, but no evidence of tenderness was noted in this region. No masses were felt. Pelvic examination showed the uterus to be infantile and slightly tender with no masses in

From the Surgical Department, St. Elizabeth's Hospital, Richmond, Va.

*Presented at the Staff Meeting of St. Elizabeth's Hospital, February 22, 1943.

the left fornix, though in the cul-de-sac there was a small tender, fixed mass. On rectal examination this was extremely tender, but there was no fluctuation. The laboratory examinations showed urinalysis negative; white cell count 19,100, polys. 88 per cent. She was operated upon by me through a McBurney incision. The cecum was found well over the pelvic brim. The appendix was located in the cul-de-sac. The omentum was extensively adherent around the outer half. This was gently freed and the appendix was delivered into the wound. It was moderately enlarged with purulent exudate covering the entire distal two-thirds. There was no evidence of perforation. The appendix was removed and 8 grams of sulfanilamide powder was sprinkled into the abdominal cavity and the wound closed. Her convalescence was entirely satisfactory. The highest temperature was 100.8; this was on the second postoperative day. The temperature gradually returned to normal. The patient was discharged on the tenth day with the wound healed.

Case 2. Mr. R. C. S., age 16, was admitted to the hospital on February 3, 1943. He gave a history of having had cramp-like pain in the epigastrium which began thirty-six hours before admission. Several hours after the onset the pain began to radiate to the lower abdomen and became more marked in the right lower quadrant near the midline. He vomited twice twelve hours before admission and had two soft stools. The pain became worse. The temperature on admission was 100, pulse 100, respirations 20. There was spasm with tenderness over the entire right lower quadrant, more marked toward the midline. There was slight spasm with rebound tenderness in the left side. No masses were palpated. Rectal examination showed a fairly well localized mass on the right side which was slightly fluctuant and very tender. Urinalysis was negative; the white cell count 11,700, with 88 per cent polys. He was operated upon by Dr. Horsley through a McBurney incision. The parietal peritoneum was greatly congested. There was a considerable amount of rather thick pus in the peritoneal cavity. It was unconfined. There was spreading peritonitis. The appendix was adherent in the pelvis. The adhesions were separated with the finger and the appendix was brought into the wound. It was 10 cm. in length and the distal third of it was gangrenous. The appendix was removed and drains were placed in the pelvis and to the base of the cecum. Five grams of sulfanilamide was placed in the abdomen and the peritoneum was loosely closed about the drains. The abdominal wound was packed with vaseline gauze. The patient made a very satisfactory convalescence except the white blood count dropped to 2,800 three days after the operation. He was given a blood transfusion and put on liver and iron therapy, and six days later the w.b.c. count was 13,800 with 81 per cent polys. A small abscess formed nine days after the drains were removed and his temperature reached 101.8. On inserting a small tube in the sinus there was some purulent discharge and the temperature reached normal in two days. He was discharged from the hospital thirty-two days after operation with the wound almost healed.

Case 3. G. A., boy, age 5, entered the hospital on February 6, 1943. The patient over a two-year period had repeated attacks of "colic-like" pain in the abdomen lasting for two to six hours. These were associated with nausea and occasionally vomiting. Following one of these he was admitted to the hospital with a diagnosis of possible appendicitis. The patient was free of all pain and very comfortable. Temperature was 100.4, pulse 108, respirations 26. The abdomen was soft and without spasm or tenderness. Rectal examination showed slight tenderness on the right side but no definite mass could be felt. There were 14,900 w.b.c. with 50 per cent polys.

Because of the lack of physical findings in the abdomen the patient was treated conservatively and in eight hours all rectal symptoms had disappeared. The temperature was normal and w.b.c. count was 7,200 with 46 per cent polys.

On the fourth day, the patient had another attack with pain limited to the lower abdomen. There was very slight tenderness in the right lower quadrant. Rectal examination showed definite tenderness on the right side, but no mass could be felt. The w.b.c. count was 10,800 with 63 per cent polys.

The appendix was exposed through a McBurney incision by Dr. Horsley. The distal half was in the pelvis and acutely inflamed. The appendix was removed and the wound was closed. His convalescence was uneventful and he was discharged without further symptoms on the twelfth day.

Case 4. Mrs. C. F. J., age 39, was admitted to the hospital on February 11, 1943. She gave a history of extreme epigastric pain with nausea and vom-

XUM

iting of sixteen hours' duration. She had just finished menstruating before the pain started. Throughout the course of her symptoms there was a marked desire to void frequently. About two hours before admission the pain became worse in the lower abdomen. The bowels had moved once since the onset of symptoms. The abdomen was remarkably free from spasm. However, there was slight tenderness in both lower quadrants, more toward the midline. No masses were palpated. On vaginal examination the uterus was in normal position with slight enlargement and tenderness. The right and left fornices were negative, but in the cul-de-sac there could be felt a definite mass the size of a walnut which was excruciatingly tender. The temperature on admission was 98, pulse 90, respirations 20. The laboratory findings showed a faint trace of albumin in the urine, positive acetone, w.b.c. 16,800, polys. 84 per cent. The patient was operated upon by me through a right rectus incision and the appendix was found in the pelvis almost encircled by omentum and adherent to the lower posterior wall of the uterus. There was no evidence of perforation, although the appendix was acutely inflamed and there was exudate on the serosa. The appendix was removed and 8 grams of sulfanilamide powder was placed in the pelvis and abdominal wound. The wound was closed without drainage. The patient made a satisfactory convalescence.

CONCLUSION

In cases of pelvic appendicitis the symptoms are often unlike those of the usual cases of appendicitis, and it is only through careful evaluation of abdominal examination, rectal examination, laboratory findings, and clinical history that a correct diagnosis can be made.

Medical Society Formed to Exchange Information With Soviet Union.

The American-Soviet Medical Society has been founded to meet an increasing demand for information about the results and achievements of Soviet medicine. Reports have reached this country of spectacular feats of surgery wrought by the Soviet medical corps all along the far-flung battle line, from Leningrad to the Caucasus. These contributions to medicine are the result of twenty-five years of untiring effort, during which the Soviet Union has built up an impressive system of public health and medicine. In hundreds of scientific research institutions behind the battle line, thousands of physicians and scientists are engaged in investigations. Yet the results are little known in this country, primarily because until now there has been no organization prepared to exchange medical information although the language in many cases has proved an almost insurmountable barrier. The American-Soviet Medical Society will fill this gap.

Through meetings, the publication of a journal, and the establishment of a library of information, the Society will tell physicians of America and members of the allied professions on what problems our Soviet colleagues are working and what steps they are taking to solve them. On the other hand, the Society will send American medical books and periodicals to the Soviet Union in order to keep the Russians informed of scientific developments in this country and to stimulate closer cooperation between the medical corps of the two countries. After the war, as soon as conditions permit, the Society hopes to promote the exchange of students and scientists and to sponsor study tours in the two countries.

The president of the Society is Dr. Walter B. Cannon, professor emeritus of physiology at Harvard University, member of the National Academy of Sciences of the United States and of the Academy of Sciences of the U.S.S.R.

Dr. Henry E. Sigerist, director of the Institute of the History of Medicine, Johns Hopkins University, is the editor of the journal which will be known as the *American Review of Soviet Medicine*.

The temporary offices of the Society are at 130 West 46 Street, New York City.

PLANIGRAPHY X-RAY TECHNIC

NELSON MERCER, M.D.,
Martinsville, Virginia.

INTRODUCTION

A new phase in the art of roentgenology is known as body section radiography or "Planigraphy".

The usual x-ray technic has always been limited in radiographing certain parts of the body because of obscuring shadows cast by heavy structures lying over or under the part to be shown on the film.

This is true in persons who have had some form of surgical collapse of a lung when the purpose is to demonstrate whether or not a cavity still exists in the compressed lung tissue. Frequently the routine stereo and flat Bucky films do not show these residual cavities even though the sputum remains positive for tubercle bacilli. Occasionally in uncollapsed lungs planigraphic films will reveal a cavity which the usual methods had not shown.

Likewise, in x-raying the lateral upper dorsal spine, this technic is valuable, as the shoulders above and below the spine are "blurred out" and do not show on the film. In other parts of the body and the head it is of value in locating pathology or foreign bodies.

In this new technic called planigraphy, any one plane section of the body can be selectively radiographed and all superimposed shadows "blurred out". This is as effective as cutting a slice through the patient and x-raying the slice, without damage to the patient.

HISTORICAL

Planigraphy was done originally in France by Bocage in 1921, and by Portes and Chause in 1922, but was discontinued for some time until revived by Vallebona and others about 1935.

Prior to 1934 an American technician, Jean Kieffer,[1] had perfected and patented an apparatus which he called "The Laminagraph". Dr. Sherwood Moore[1] collaborated with Kieffer in this pioneer work.

In 1936, Dr. J. R. Andrews[2] presented a review of body section radiography and described the new planigraphy technic.

In 1937, the Siemens "Planigraph" was placed on the market and has had extensive use, although designed for upright planigraphy and vertical motion.

Subsequently the demand for a moderately priced attachment to convert existing tubestands and Bucky tables into an efficient planigraphic device has recently been met.

This development in x-ray technic opens a new and unlimited field to radiologists, and is of great value to clinicians in making a definitive diagnosis or localizing pathology or foreign bodies deep in the body. In fact, an x-ray laboratory is not complete without facilities for making planigraphic films.

DESCRIPTIVE TERMS

Several terms have been employed in describing body section radiography as follows: Planigraphy, using the Planigraph; Tomography, using the Tomograph; Laminagraphy, using the Laminagraph; and Stratagraphy, using the Stratagraph.

Of these, "Planigraphy" is the usual term to describe body section radiography.

PRINCIPLES OF PLANIGRAPHY

Planigraphy allows the selective radiography of plane sections within the body. By making use of the "motion blurring" of all structures lying either above or below the plane, exactly on a level with the fulcrum of motion, shadows of overlying or underlying structures are made to disappear, leaving only the required plane section in sharp detail.

For instance, to x-ray a collapsed lung following a thorocoplasty operation and demonstrate the presence of a cavity, however small, and its exact location by "blurring out" the shadows above and below it, is an example of this technic.

This is accomplished by moving the tube and the film in opposite directions throughout the exposure. The radiation will form an axis at a plane parallel to the table top between tube and film. The position of this axis plane is governed by the proportion of motion of tube to motion of film. Any structure in the plane of this axis will be radiographed in sharp detail while others lying outside this axis plane will be blurred out. The wider and

faster the excursion of the tube the thinner the plane projected in sharp detail on the film. The amplitude of motion should be great in planigraphy.

EQUIPMENT REQUIREMENTS

The general equipment requirements for straight line (rectilinear) body section radiography are a rail mounted tubestand, a Bucky table, a means of propulsion, and some linkage mechanism so arranged that the Bucky will be moved in the opposite direction to the tubestand motion.

Two basic requirements to assure sharp detail in planigraphic films are: 1. All motion of the tube must be oppositely duplicated by the film with great precision. (The focal spot must travel along a straight line parallel to the film). 2. All vibration must be entirely eliminated.

The "rod-link" rectilinear type of machine is considered the best. A rigid rod connects the x-ray tube and the Bucky film carrier, and passes through a "fulcrum point" at an adjustable height above the table top. The position of the fulcrum determines the position of the body cut (planigraph) of a thin layer of body structure parallel to the film at the exact height of the fulcrum.

The "fulcrum jack" is fastened solidly to the rear edge of the Bucky table and is easily removable. The fulcrum is raised or lowered by means of a spiral screw which allows adjustment in fractions of a centimeter. A lock secures its position during motion, and it can be fixed at any height from 1 to 22 centimeters (.4 to 8.8 inches) above the table top on a graduated scale.

The driving mechanism is usually motor-driven, but some attachments are operated by handpower. The amplitude can be varied from 60 to 100 centimeters (24 to 40 inches), and by adjusting the exposure time, the effective amplitude can be adjusted over a wide range.

SEQUENCE OF OPERATION

When the tubestand begins its travel along the rail mount, the Bucky film carrier travels in the opposite direction, and "Bucky exposure" is made while tube is in motion. The entire exposure is made during the rectilinear motion and speed is so adjusted.

Exposure time can be varied from 2 to 8 seconds during a maximum amplitude. Shorter exposures can be made when less than 60 centimeter amplitude is permissible, but these are rare.

Planigraphic films are usually made at intervals of 1 centimeter through the part desired, a new film being placed in the casette for each exposure.

CONCLUSIONS

The writer's experience with a home-made hand-operated rod-link attachment for two years has convinced him that planigraphy x-ray technic is of distinct diagnostic advantage over the usual stereo or flat Bucky films in patients who have undergone surgical collapse of a lung.

It is also of value in locating cavities in uncollapsed lungs, and pathology or foreign bodies in other parts of the body and head.

The planigraphic method of definitive x-ray diagnosis should be more widely employed in all x-ray laboratories whether located in office buildings, general hospitals, or tuberculosis sanatoria.

When for any reason the motor-driven attachment cannot be obtained, a good mechanic can install a satisfactory hand-operated rod-link attachment at very moderate cost.

REFERENCES

1. "The Laminagraph," by Jean Kieffer and Sherwood Moore, *Amer. Jour. Roentgenology and Radium Therapy,* April, 1938.
2. "Planigraphy—Introduction and History," by J. R. Andrews, *Amer. Jour. Roentgenology and Radium Therapy,* November, 1936.

602 Watt Street.

CASE REPORT OF MATERNAL DEATH

MATERNAL HEALTH COMMITTEE
MEDICAL SOCIETY OF VIRGINIA

The patient was a twenty-seven year old white woman in her first pregnancy who apparently had adequate prenatal care from the first month of the pregnancy. No abnormalities were noted, although the patient was the short, stocky and stout body type. Labor began at term, and after ten hours of labor pains, the patient was delivered in the home by forceps under chloroform anesthesia, following prolapse of a non-pulsating cord. The fetal heart had been heard about two hours before the cord prolapsed. The child was stillborn. Following delivery there was somewhat more than the usual amount of bleeding, although the patient's general condition seemed fairly satisfactory. The physician remained at the home for six hours after delivery. Two hours later, eight hours postpartum, the physician was called back to the home and on his arrival found the patient dead. There was no evidence of excessive external bleeding. The family told the physician that the patient had what appeared to be a convulsion just prior to the time of death.

COMMENT

This case has been classified by the committee as a preventable obstetrical death. As the delivery and death occurred in the home, no autopsy was performed, therefore the exact cause of death is not known. The cause of death on the death certificate was given as embolism, although it would seem much more likely that the patient died from hemorrhage and shock. It is not unlikely that there were also lacerations of the cervix or a rupture of the lower uterine segment. When the results in this case are considered, it would seem that the operative delivery in the home was ill advised. There is no information available to the committee which suggests what indication if any existed for the operative delivery. The prolapse of a pulseless umbilical cord does not of itself indicate immediate delivery. The question naturally arises whether the operation was not performed through an incompletely dilated cervix. The application of forceps or a breech extraction through an incompletely dilated or retracted cervix is fraught with the grave danger of deep lacerations of the cervix, which may extend to the lower uterine segment and result in death from hemorrhage. It is possible that this may have been what happened in the present case.

Some members of the committee felt that the patient should have been transferred to a hospital after delivery as her condition postpartum was obviously not satisfactory. There transfusions of whole blood or plasma may have offered her a better chance of survival. It would have seemed wiser to have transferred the patient to a hospital before attempting the operative delivery. In view of the operative delivery in the home without any well recognized indication, the failure to make a diagnosis to explain the poor condition of the patient postpartum, the failure to employ any adequate therapy postpartum, and the failure to send the patient to a hospital where more energetic therapeutic measures could have been employed, it is felt that this should be considered as a preventable obstetrical death.

American Board of Obstetrics and Gynecology.

Applications for the 1944 examinations of the Board are being received at the office of the Secretary, Dr. Paul Titus, 1015 Highland Building, Pittsburgh, Pennsylvania. A number of changes in Board regulations and requirements were put into effect at the May meeting of the Board. Booklets of information regarding these, together with application forms will be sent upon request. All applications for the year 1944 must be in the Secretary's Office not later than November 15, 1943, ninety days in advance of the Part I examination date.

XUM

Public Health

I. C. RIGGIN, M. D.,
State Health Commissioner of Virginia

The report of the Bureau of Communicable Diseases of the State Department of Health for May, 1943, compared with the same month in 1942, and for the period of January through May, 1943, compared with the same period in 1942, follows:

	May 1943	May 1942	Jan.-May 1943	Jan.-May 1942
Typhoid and Paratyphoid Fever	7	16	51	61
Diarrhea and Dysentery	182	141	602	504
Measles	1,721	953	7,871	4,284
Scarlet Fever	191	65	969	659
Diphtheria	14	21	152	200
Poliomyelitis	2	2	12	5
Meningitis	106	23	598	90
Undulant Fever	1	2	10	10
Rocky Mountain Spotted Fever	0	2	0	3
Tularemia	0	2	23	21

ACTINOTHERAPY IN THE TREATMENT OF TUBERCULOSIS

The value of actinic rays as a therapeutic agent has been recognized for many generations, dating as far back as we have history of medicine. However, little was known about the nature of these rays or their effect upon the human body and the many diseases for which they were prescribed. Even today the subject is controversial. However, certain facts are well known and are thought to be worthy of emphasis.

Actinotherapy undoubtedly has a place in the treatment of certain types of tuberculosis, namely, of the skin, bone, glandular system, peroneum and enteric tract. Even so, the administration is not without danger and should be prescribed only by the physician who is fully acquainted with the kind and quality of rays employed, their depth of penetration, and their effect on the condition for which they are intended, as well as on the system as a whole. In the pulmonary forms of tuberculosis it is doubtful if light treatment ever is of value. On the other hand, it is well known that this therapy often is very dangerous.

In dealing with photochemical light we have in our hands an agent of great potency. We must remember that these rays can kill and cause burns of all degrees of severity, that they may cause reactions in the tuberculous comparable in every way with tuberculin effects and with all that substance's power of working havoc in the patient. Under no circumstances should this treatment be used on subjects in which there is no tendency to pigment formation, or in those cases in which there is fever or those who show febrile reactions following exposure.

Thus, in short-wave light we have an agency of great potency which may accomplish some good but which also can perhaps be quite harmful. Just where the good begins and the harm starts, and where they overlap, is not definitely known as yet. It is believed that sunlight is being unscientifically and often carelessly applied in many cases and that we are only saved from disastrous reactions in many instances by nature's ability to protect from the bad effects by the deposit of pigment. This careless use of sunlight quite often may turn the scale from good to bad results in the treatment of pulmonary tuberculosis especially. We may even have opthalmias, skin diseases, disturbances of metabolism, internal secretions and perhaps disorder of the hemopoietic system caused by light. Unfortunate results will certainly appear if actinic lights are used by the layman at his own discretion. Chemical lights should be used only under direct medical supervision. At this stage of knowledge, even physicians know so little about the application of radiations that they should be very careful indeed in the employment of this agent until time has better defined the limit of their usefulness.

Book Announcements

Books received for review are promptly acknowledged in this column. In most cases, reviews will be published shortly after the acknowledgment of receipt. However, we assume no obligation in return for the courtesy of those sending us same.

Atlas of Obstetric Technic. By PAUL TITUS, M.D., Obstetrician and Gynecologist to the St. Margaret Memorial Hospital, Pittsburgh; Secretary, American Board of Obstetrics and Gynecology. Illustrations by E. M. Shackelford, Medical Illustrator, John C. Oliver Memorial Research Foundation, St. Margaret Memorial Hospital, Pittsburgh. St. Louis. The C. V. Mosby Company. 1943. 180 pages. Cloth. $7.00.

Essentials of Syphilology. By RUDOLPH H. KAMPMEIER, A.B., M.D., Associate Professor of Medicine, Vanderbilt University School of Medicine; in charge of the Syphilis Clinic and Visiting Physician to Vanderbilt University Hospital. With Chapters by Alvin E. Keller, M.D., and J. Cyril Peterson, M.D. Philadelphia. J. B. Lippincott Company. 1943. xvi-518 pages. 87 illustrations. Cloth. Price $5.00

A Guide to Practical Nutrition. A Series of Articles on Nutrition, Sponsored by the Committee on Nutrition and Deficiency Diseases of The Philadelphia County Medical Society. Edited for the Committee by Michael G. Wohl, M.D., and John H. Willard, M.D. Introduction by Morris Fishbein, M.D., Editor of the *Journal of the American Medical Association*. Reprinted from Philadelphia Medicine, 1941-1942. 98 pages.

Blood Substitutes and Blood Transfusion. Edited by STUART MUDD, M.A., M.D., Professor of Bacteriology, University of Pennsylvania School of Medicine; and WILLIAM THALHIMER, M.D., Director, Human Serum Division Public Health Research Institute of the City of New York, Inc. Charles C. Thomas, Springfield, Illinois. 1942. xiv-407 pages. Illustrated. Cloth. Price $5.00.

This volume is a monograph based upon the proceedings of a symposium held at the June, 1941, meeting of the American Human Serum Association. The reports have been rearranged into a logical series; the final form is a group of twenty-seven contributions, each author an authority in his field.

First there are four reports on the etiology and mechanisms of secondary shock, based in each presentation upon the author's experimental studies. This is followed by discussions of the several methods of preservation of plasma and serum, with detailed descriptions of some of the techniques. The conclusions to be drawn from these papers are that freezing without desiccation preserves plasma in its most nearly normal state, and that plasma dried from the frozen state is far superior to that in which heat is used during desiccation. The third section deals with the use of hemoglobin solutions, serum albumin, and casein digest as blood substitutes. The studies upon hemoglobin promise nothing, and not much more has come of them. The reports on serum albumin solution and casein digest are prophetic, since both have been subsequently demonstrated to be of great value. Section four is a discussion of blood substitutes as they appear in the present world emergency, how they have been used, and methods for the control of plasma preparation and distribution. A miscellaneous group of reports follows, including the storage and transportation of whole blood, studies on the universal donor, a consideration of the Rh factor, and a presentation of the use of blood-group specific substances in the neutralization of group 0 blood. At the time of the symposium actual clinical experience with the blood substitutes was not very great; therefore the reports on the therapeutic use of plasma, etc., are relatively few.

This is a symposium, and there are definite limitations upon its value because of this form of presentation. It is a series of individual opinions and experiences; therefore it is dangerous reading for the uncritical student who is also inexperienced in the field of blood substitutes, and should not be used as a text-book. In this collection of communications, we have a permanent, concentrated statement of the various methods of preservation of plasma. However, even though the results of later work have in some cases been added, this is essentially the status of the blood substitute problem in June, 1941. In this respect the volume is dated. Notably absent from the symposium is a discussion of the utilization of concentrated erythrocyte suspensions, as demonstrated by British workers. The book comprises the work of experts, is scientifically exact, and serves best as a permanent record of the views of these authorities. A. K.

When Doctors Are Rationed. By DWIGHT ANDERSON, Director Public Relations, Medical Society of the State of New York. And MARGARET BAYLOUS, Therapist, Charleston General Hospital, Charleston, W. Va. Coward-McCann, Inc., New York. 1942. 255 pages. Cloth. Price $2.00.

Written for the lay reader, this volume tells, quite satisfactorily, the story of the present situation in medicine, with particular interest in the role of medicine and of medical personnel in the war effort, in the public health services, in industrial

XUM

medical and health services and in the civilian population groups through the nation. The medical reader will smile or frown, dependent upon his sense of humor, at the medical students' program, particularly at his approach to the clinical problem presented in a patient, and at the urologists' plight in meeting civilian needs, since "it has possibly been several years since he splintered (sic) a broken leg."

The non-medical reader is given encouragement: to look to his physician for service; to depend upon the medical society for professional discipline; to appreciate the medical and public health services available to him; to use these services intelligently and to remember that the physician, particularly during these strenuous days and the days to come, merits every consideration to the end that he may serve his patients most effectively.

Finally, the reader is given information which will permit him to understand the rationale of such action, if and when doctors are rationed.

J. P. GRAY, M.D.

Fractures. By PAUL B. MAGNUSON, MD., F.A.C.S., Associate Professor of Surgery, Northwestern University Medical School; Attending Surgeon, Passavant Memorial Hospital and Wesley Memorial Hospital, Chicago. Philadelphia. J. B. Lippincott Company. 1942. 4th Edition Revised. xxii-511 pages. 317 Illustrations. Cloth. Price $5.50.

Dr. Magnuson has revised this foutrh edition during the first year of World War II so that physicians and medical students alike may have a practical knowledge of the present concepts in the treatment of all fractures. He has included numerous photographs, drawings and x-rays to illustrate difficult points to describe. The book ideally begins with fundamentals and a general discussion of fractures and lists 10 all important "High-Lights" on the very first page. Pathology, anatomical mechanisms and physical equipment are thoroughly covered. Compound fractures receive notable consideration and the use of Tetanus and Gas Bacillus prophylaxis, Sulfonamide therapy and the immediate treatment of Shock are strongly emphasized. A discussion of associated head injuries is also adequately presented. The last chapter of the book discusses physical therapy in the after treatment of fractures and includes an excellent table on immobilization times and rehabilitation. The appendix contains an excellent bibliography. This book is of inestimable value to those who desire a knowledge of the management of fractures. GORDON G. CARMICHAEL, M.D.

Fundamentals of Psychiatry. By EDWARD A. STRECKER,, M.D., Sc.D., F.A.C.P., Professor of Psychiatry and Chairman of the Department, Undergraduate School of Medicine, University of Pennsylvania; Psychiatrist to the Pennsylvania Hospital; and Attending Psychiatrist, Psychopathic Division, Philadelphia General Hospital. Philadelphia. J. B. Lippincott Company. 1942. xvii-201 pages. 15 illustrations. Cloth. Price $3.00.

This is a short but very didactic outline of psychiatry. It differs from similar publications by its broad and philosophical approach. A successful attempt is made to eliminate the slightest traces of irrational thinking in this field and to treat psychiatry at the same level and by the same methods as any other medical science. This approach leads the author necessarily to discuss the basic principles of his rational method, such as causal analysis, classification, purpose and scope of examination, nature of symptoms, etc., thus helping the reader and student to conceive psychiatry (so confusing in the beginning) as a systematic, although flexible whole. Although a skeptical attitude may be justified with regard to the use of tables and diagrams in psychology and psychopathology, the author fully succeeded in his effort to illustrate some important facts, such as the contribution of the various etiological factors to the outbreak of a mental disease, the role a given factor plays in the diagnosis, when compared with the other factors, the relative accord between ideation and its emotional expression in the various psychotic conditions, the relative degrees of deterioration, the relatively greater departure from the "normal" involved in psychosis as contrasted to psychoneurosis, etc.

W. RIESE.

The Kenny Concept of Infantile Paralysis and Its Treatment. By JOHN F. POHL, M.D., Clinical Assistant Professor of Orthopedic Surgery, University of Minnesota; Attending Orthopedic Surgeon, Minneapolis General Hospital. In Collaboration with SISTER ELIZABETH KENNY, Honorary Director the Elizabeth Kenny Clinics of Australia; Honorary Director the Elizabeth Kenny Institute, Minneapolis. With a Foreword by FRANK R. OBER, M.D., President, The American Orthopedic Association. Bruce Publishing Company, Minneapolis and St. Paul. 1943. 366 pages. Illustrated. Cloth. Price $5.00.

Dr. Pohl attempts a scientific explanation of the observations and success of Sister Kenny. It is still rationalization, as even the author admits.

The real importance of the book lies in the challenge it flings at the profession. We have closed our eyes to many of the clinical features of the dis-

ease infantile paralysis, because we did not understand the pathology behind them. Now we are faced with actual statistics, and to them we must open our eyes, even though the explanation is still hypothetical.

By the Kenny concept, muscles which are in spasm during the acute stage of the disease represent the affected nerve-muscle units. Formerly these were considered to be the normal ones. The antagonists of these spastic muscles are flaccid, not, as previously thought, because their anterior horn cells have been invaded, but because they have been "alienated". A physiological block is said to have resulted from the pain and spasm in the affected, opposing muscles. Foments are used to relax the spasm, then careful re-education and training is directed at re-establishing function in the "alienated" muscles.

Now comes an interesting and pertinent point. Dr. Pohl likens the changes which later occur in the spastic muscles to the ischemic contracture of Volkmann. There is, he says, a change in the muscle substance probably due either to the direct effects of the virus or to some circulatory disturbance. Can we reconcile these contractures with the orthodox concept of the disease? I think not. We have not controlled them with the orthodox treatment. Pathologists, neurologists, and physiologists must backtrack and follow this new lead before anything more fundamental can be added.

There are many other stimulating points, and the terms incoordination, nerve-muscle dissociation, mental awareness, etc., have been given added significance. For the most part the book is difficult reading, but I urge everyone, skeptic and enthusiast alike, to read at least Dr. Knapp's twelve-page commentary before he considers himself as one who understands infantile paralysis.

About two-thirds of the 355 pages is a monotonous rephrasing and repetition of the statements Sister Kenny has so persistently and defiantly presented many times before. With his better academic background Dr. Pohl is naturally able to present the material in a more convincing way than has been previously done. This in itself is a valuable contribution.

Physiotherapists and technicians carrying out the actual treatment will welcome the detailed description of each step to be used in the care of each muscle group. There is an interesting classification of muscles, a chapter on balneotherapy, and another on orthopedics. Each is alloted a specific, but limited role in the treatment as presented by Dr. Pohl.

D. T. IMRIE, M.D.

The Inner Ear. Including Otoneurology, Otosurgery, and Problems in Modern Warfare. By JOHN FISCHER, M.D., Staff Member, Beth Israel Hospital, Boston. And LOUIS E. WOLFSON, M.D., Instructor in Ear, Nose, and Throat, Tufts Medical School; Senior Surgeon in Ear, Nose, and Throat, Boston Dispensary. 1943. Grune and Stratton, New York. xii-421 pages. Illustrated. Cloth. Price $5.75.

This book is of particular interest to the otologist, neurologist and neuro-surgeon. Any thesis covering the physiology of the labyrinth must in itself either be very confusing by covering all the experimental data on the subject or accept certain fundamental physiologic laws to explain the functional tests of the labyrinth. Dr. Fischer has a fairly happy medium in his discussion of the subject.

The chapter on the functional tests of the inner ear, and the author's evaluation of abnormal reactions to these tests, is very stimulating and instructive. It reflects the fine type of work done by the Vienna School of Otologists for years.

A review of Otosclerosis and Meniere's Syndrome is included and brought up to date. The inflammatory diseases of the inner ear and their intra-cranial complications are discussed, together with advances made by the introduction of chemotherapy.

An interesting and timely section on war trauma and the role of the inner ear in aeronautics is included. Particular interest is shown to the importance of and methods used in examining the ears of prospective fliers.

The whole book emphasizes the important role played by the otologist in rendering diagnostic aid to the neurologist and neuro-surgeon, where lesions of the cerebellum, inner ear and certain of the cranial nerves occur.

As usual with any first edition, particularly of such a complicated subject, a few contradictory statements are to be found. These however do not detract appreciably from the value of the book.

MAYNARD SMITH, M.D.

XUM

VIRGINIA MEDICAL MONTHLY

Official Publication of the Medical Society of Virginia

(Founded by Landon B. Edwards, M. D., April, 1874)

WYNDHAM B. BLANTON, M. D.,
Editor Emeritus

M. PIERCE RUCKER, M. D.,
Editor

AGNES V. EDWARDS
Business Manager

PUBLICATION COMMITTEE

M. PIERCE RUCKER, M. D., Richmond, *Chairman*
J. EDWIN WOOD, JR., M. D., University WYNDHAM B. BLANTON, M. D., Richmond.

All correspondence regarding editorial matter, original articles, and policy should be directed to the Editor. Questions relating to subscription rates, advertising, etc., should be addressed to the Business Manager, 1200 East Clay Street, Richmond, Virginia. The MONTHLY is not responsible for the opinions and statements of its contributors. All advertisements are accepted subject to the approval of the Council on Pharmacy and Chemistry of the American Medical Association. Annual Subscription, $2.00. Single Copies 25c.

VOL. 70 JULY, 1943 No. 7

The Medical Side of Thomas Jefferson

THIS nation that is now struggling so hard to preserve the various freedoms, is not too busy to celebrate the two-hundredth anniversary of the great Virginian who requested that on his tombstone be inscribed: "Here was buried Thomas Jefferson, Author of the Declaration of Independence, of the Statute of Virginia for Religious Freedom, and Father of the University of Virginia".

He said nothing about his being President of the United States, Governor of Virginia, Secretary of State, Ambassador to France, about the Louisianna Purchase, or his architectural achievements. No mention was made that he was the father of the Bureau of Standards, the Geodetic Survey, the Patent Office, the President of the American Philosophical Society, etc. The many-sidedness of his nature was truly astounding. He was withal a philosopher and a scholar and therefore, as was common in his day, he was interested in medicine. Many valuable side lights on medicine, as it was practiced, are found in his writings. When he built the University of Virginia, he selected the first faculty and Robley Dunglison was the Professor of Medicine. He regarded medicine as a branch of learning or discipline, as we would now say, on the same footing as mathematics or the ancient languages. Another member of the original faculty that he imported was John Patton Emmet, M.D., father of Thomas Addison Emmet, and he thus greatly benefited gynecology, a specialty that was unheard of in his day. In fact there were no specialists of any kind in medicine in Jefferson's time. Any educated person considered himself qualified to practice medicine and often did. It is well known that William Byrd of Westover and Thomas Jefferson of Shadwell, Monticello, and Poplar Forest, practiced medicine on their slaves and even their families. The former was especially severe in his criticism of the professional doctors. It should be remembered that the practice of medicine was comparatively simple. Surgery was confined to the surface of the body. The body cavities were rarely invaded. Jefferson

was fifty-six years old when McDowell performed his epochal operation of ovariotomy. Eighteenth century medicine was in the throes of various "systems". In Jefferson's time the Brunonian theory was dominant. Disease was either sthenic or asthenic. There was no pathology to hamper the theorizing. For the sthenic you bled, purged, or gave a vomit. For the latter you supported the patient with opium or alcohol.

Thomas Jefferson was extremely interested in all forms of knowledge and made notable contributions to science. Beside scientific agriculture, he studied Indian relics and fossils. He described the bones of a prehistoric animal to which he gave the name "Megalanyx Jeffersoni". His greatest medical achievement was the introduction of vaccination into this country. With the possible exception of Benjamin Waterhouse, no one had more to do with that great hygienic measure. He himself vaccinated some 200 of his household and neighbors and he showed his scientific bent by recording the number and nature of the complications. Two were made ill with high fever. He recorded the number that had pustules other than at the side of the inoculation and the number who had enlarged glands, etc. A serious problem at that time was the preservation of the potency of the cow pox virus. He was of the opinion that the eighth day was the optimum time at which to remove the scab which was to be used for transmitting the disease. He devised a means for successfully transporting the scab. It was thought that the temperature of the atmosphere was the reason that the scab lost its potency when transported any distance. Jefferson sealed the scab in a small vial and placed that in a larger bottle which was filled with water. The method was successful. Not content with introducing vaccination into his own neighborhood, he saw to it that vaccine was sent to Richmond, Petersburg, Washington, and Philadelphia. He even instructed Lewis and Clarke to take it with them to the Indians in the Northwest.

Ideals and Ideologies

IN these days of planned currency, planned prosperity, and planned agriculture, when people look to their government rather than to themselves for a solution of all their problems, we hear a lot about ideologies, but precious little about ideals. Formulae rather than character are the important things. Homely virtues are entirely outmoded. Old fashioned folk had their ideals, usually exemplified by some person or persons whom they admired and loved. They lacked much of attaining their standard, but at least their ideals gave direction to their lives. At our mother's knee, like thousands of other Southern children, we were taught that General Lee was the very ideal of perfect manhood. Mother taught us that *duty* is the sublimest word in the English language. General Lee believed it and that was all there was to it. There was no argument about it, whatever. Later, another ideal came into our life, expressed by the Biblical word, *charity*. Our father, like hundreds of other old fashioned doctors, was the very embodiment of that ideal. We used to say that he would rather get up in the night and go to see a charity patient than one who paid him cash. We certainly never heard him complain about a poor person being unreasonable. When we went to college, Dr. Arthur Wightman, our biology teacher, supplied a third ideal. He was constantly extolling the virtues of *truth*. We can hear him now quoting the Hopkins motto, "*Veritas Vos Liberabit*". Finally, in the medical school, that great personality, William Osler, added the fourth and perhaps the greatest ideal, the one which makes the other three dynamic. His master word was *work*.

XUM

Societies

Norfolk County Medical Society.

At the annual meeting of this Society in June, Dr. N. F. Rodman succeeded to the presidency and the following officers were elected: president-elect, Dr. F. C. Rinker; vice-president, Dr. James V. Bickford; and secretary-treasurer, Dr. Lockburn B. Scott, re-elected for the twenty-fifth consecutive year. Delegates and alternates to the Medical Society of Virginia were also named, and Dr. William A. Simpson, Portsmouth, was elected to membership. The next regular meeting will be held on October 4th.

Richmond Academy of Medicine.

The last meeting of the Academy before the summer intermission was held on May 25th and the program was planned to honor its past presidents. Twenty-one of the twenty-six living past presidents were in attendance and the program was presented by two of these—Dr. M. Pierce Rucker, whose subject was "Tuberculosis of the Vulva", and Dr. James H. Smith, who read a paper on "The Treatment of Pneumonia and Its Complications". Dr. Arthur S. Brinkley presided and the meeting was followed by a buffet supper in the dining room.

The Virginia Peninsula Academy of Medicine

Held its regular monthly meeting on May 17th at Camp Patrick Henry near Newport News. The attendance was larger than usual due to the presence of some two hundred medical officers from the various army posts on the Peninsula. After dinner, the scientific program was presented by personnel of the Camp as follows: Introduction by Col. Scott C. Runnels, MC., Commanding Officer; Pitfalls in Urological Diagnosis and Treatment by Lt. Col. C. A. Bowers, MC., Chief of Surgical Service; Blast Injuries by Maj. Edwin G. Faber, MC., Chief of Medical Service and The Use of the Bronchoscope as an Aid in Treatment in Diseases of the Chest by Capt. J. R. Birch, MC., Chief of E. E. N. T. Section.

The following officers were elected: President, Dr. Waverly R. Payne, Newport News; vice-president, Dr. Harvey G. Bland, Newport News; and secretary-treasurer, Dr. Robert H. Wright, Jr., Phoebus. The next meeting will be held the 3rd Monday in September after the customary summer adjournment.

News

Southern Medical Association to Meet in November.

The executive committee of the Association met recently in New Orleans and voted to hold its annual meeting in Cincinnati, Ohio, November 16, 17 and 18, and to have the program equally divided between civilian and military medicine. Dr. Harvey F. Garrison of Jackson, Miss., is this year's president.

News from the University of Virginia.

The Baltimore-Washington Dermatological Society held a meeting at the University of Virginia Hospital on Saturday, May 29. The following cases were demonstrated by the staff of the Department of Dermatology and Syphilology (Drs. D. C. Smith, J. C. Shafer, P. E. Jones, A. J. Crutchfield, and P. A. Booker): Dermatomyositis, Linear lichen planus, Erythroplasia of Queytat, Molluscum contagiosum, Keratosis follicularis, Granuloma annulars, Lichen planus erythematosus, Glossitis rhombica mediana, Lymphogranulama inguinale, Lichen sclerosus atrophicus, Primary tuberculosis complex-face, Erythema induratum, Monocytic leukemia cutis, Porokeratosis, Pemphigus in a child, Gaucher's disease, Rocky Mountain spotted fever, Lupus vulgaris, Xeroderma pigmentosa, Addison's disease, Erythema scarletenoides, Cases of primary, secondary and late syphilis. There was a demonstration of fever therapy in neurosyphilis with foreign protein intravenously. Dr. Alfred Chanutin, Professor of Biochemistry, reviewed the subject of lipid metabolism as it relates to psoriasis.

Dr. F. D. Woodward attended the Council Meet-

ing of the American Laryngological, Rhinological and Otological Society in New York on June 1. As a member he attended the examinations of the American Otolaryngology Board held in New York on June 2, 3, 4, and 5.

Dr. M. K. Humphries took the American Board of Otolaryngology Examination in June.

On June 6, 7, and 8, Dr. Robert V. Funsten attended the meeting of the American Orthopedic Association in New York. A report was heard from the Investigation Committee of the Sister Kenny Treatment of Infantile Paralysis.

News from the Medical College of Virginia.

Dr. Tom Spies, Hillman Hospital and Clinic, Birmingham, Alabama, and associate professor of medicine, University of Cincinnati, was a recent college visitor.

Dr. Lynn DeF. Abbott, assistant professor of biochemistry, has joined the armed service. He will be replaced on July 1 by Dr. Miriam Clarke Madison.

Dr. Leroy Smith, an alumnus of the class of 1936, has been appointed associate in surgery and oral surgery. Dr. John Reed, a graduate in the class of 1928, has also been appointed associate in surgery.

Enrollment for the session which began April 5, is: Medicine, 313; dentistry, 148; pharmacy, 61; nursing, 182. In the school of pharmacy a freshman class will not enter until July 5. The school of nursing admitted a class in February and will admit classes in June and September.

Dr. William T. Sanger, president, made the annual Commencement address at Madison College, Harrisonburg, Virginia, on June 7.

Dr. Claude Neale, assistant professor of psychiatry, is spending the month of June visiting various medical schools, looking over their departments of psychiatry. This was made possible by a travel grant from the Rockefeller Foundation.

Although formal contract has not been signed, it is anticipated that the army and navy student training program will become effective for the army on June 20 and for the navy on July 1. Students under the army training program in the schools of medicine and dentistry have received physical examinations and went to Camp Lee for four days prior to June 20 for processing. The institution has not received definite instructions from the navy on the processing of its members.

Dean Wortley F. Rudd of the School of Pharmacy was honored on June the 11th at a dinner given at the Country Club of Virginia by the Virginia Section of the American Chemical Society, which he helped organize in 1913.

Dr. E. F. Gouldman,

Formerly of Colonial Beach, who has for the past two years been engaged in special work in obstetrics and gynecology, has accepted the position of associate resident in obstetrics for a year at John Gaston Hospital in Memphis, Tennessee, effective June 15. He has recently been in Canton, Ohio.

Dr. I. C. Riggin,

State Health Commissioner, has been selected as chairman of a committee on public health in the Bureau of Placement, Procurement and Assignment Service, War Manpower Commission. The Committee will be called upon for advice and guidance in the work of maintaining adequate public health services in the united public health services in the United States.

Married.

Dr. Donald Roscoe Gilbert, Melvin Hill, N. C., and Miss Connie Mae Evans, Clifton Forge, May 15th. Dr. Gilbert is a graduate of the Medical College of Virginia, class of 1942. They will make their home in Spartanburg, S. C.

Lt. Alexander Erskine Sproul MC., and Miss Ruth Eileen Peters, both of Staunton, May 27th. Dr. Sproul graduated in medicine at the University of Virginia in 1941 and is now stationed at Pocatello, Idaho.

Dr. J. Warren White,

Norfolk, has been named president of the Hampden-Sydney alumni fund for the coming year, succeeding Dr. H. Wallace Blanton of Richmond.

Virginia Graduate Receives Trudeau Medal.

Dr. David Russell Lyman, a graduate of the University of Virginia and Johns Hopkins Medical School, has been awarded the Trudeau Medal which is given annually to one whose work has been outstanding in the campaign against tuberculosis. He

XUM

has been actively engaged in the campaign for the control of tuberculosis since his early years in medicine when he was associated with Lawrason Brown at Saranac. Since 1918, Dr. Lyman has managed the Gaylord Farm Sanatorium at Wallingford, Connecticut. He was one of the founders of the National Tuberculosis Association and in 1918 he assisted Livingston Farrand, the head of the Rockefeller Foundation, in rehabilitation work in France. In the same year he was made president of the National Tuberculosis Association. Dr. Lyman is also a former president of the Connecticut State Medical Society.

American Medical Association.

The annual session of the A. M. A. this year was limited to a meeting of the delegates and to two general meetings which were held in Chicago, June 7-9. Dr. James E. Paullin, Atlanta, succeeded Dr. Fred W. Rankin to the presidency, and Dr. Herman Louis Kretschmer, Chicago, was named president-elect.

Delegates from Virginia were Dr. Walter B. Martin of Norfolk, now stationed at Battle Creek, Mich., and Dr. J. Morrison Hutcheson of Richmond.

Dr. Robert S. Montgomery

Has been elected president of the South Hill Chamber of Commerce.

Special Consultant in Psychiatry for Army Air Forces.

Dr. Edward A. Strecker, president of the American Psychiatric Association, and professor and head of the department of psychiatry at the University of Pennsylvania's Graduate School in Philadelphia, and the Medical School of the same university, has been named Special Consultant to the Secretary of War for the Air Forces of the United States Army. In this capacity, he will act as advisor to War Secretary Stimson on all questions relating to psychiatry in the Air Forces, and will be on call at all times by the War Department.

Recently he was named Consultant in Psychiatry to the Surgeon General of the U. S. Navy, in which capacity he acts as advisor in psychiatry to the Navy's Bureau of Medicine and Surgery.

The Association of Military Surgeons of the United States

Will hold its 51st annual convention in Philadelphia at the Bellevue-Stratford Hotel, October 21-23, inclusive.

The three-day convention will assemble doctors from the war fronts and from the great base hospitals where rehabilitation of the wounded is in progress. Numerous forum lectures, practical demonstrations, moving pictures and teaching panels are planned to present information on the latest techniques of wartime medicine and surgery.

Honorary chairman of the convention this year is Rear Admiral Ross T. McIntire, Surgeon General of the Navy. The general chairman is Captain Joseph A. Biello, Medical Corps, USN, who is District Medical Officer of the Fourth Naval District.

National officers of the association are as follows: President, Captain William L. Mann, Medical Corps, USN, National Naval Medical Center, Bethesda, Md.; first vice-president, Col. Lucius A. Salisbury, Medical Corps, New York National Guard; second vice-president, Assistant Surgeon General Warren F. Draper, U. S. Public Health Service; third vice-president, Col. Edgar Erskine Hume, Medical Corps, U. S. Army; fourth vice-president, Col. Irvin Abell, Medical Reserve, USA; fifth vice-president, Dr. Martin L. Cooley, Veteran's Administration; secretary, Col. James M. Phalen, USA (Ret.), and executive secretary, Stuart E. Womeldorph.

The Winthrop Chemical Company

Announces the appointment of Edward Dawson Davy, Dean of the School of Pharmacy, Western Reserve University, Cleveland, as Director of their Pharmaceutical Division. Mr. Davy will make his headquarters at the company's plant at Rensselaer, N.Y. For the past 21 years Mr. Davy has been associated with Western Reserve, serving as Professor of Pharmaceutical Chemistry until his appointment as Dean of the School of Pharmacy in 1940.

Dr. A. E. Sherndal, plant superintendent of Winthrop Chemical Company, and long associated with the company, has been elected vice-president. Dr. Sherndal recently was awarded an honorary degree of Doctor of Science by St. Lawrence University for his research work in the synthesis and manufacture of Atabrine.

The West Virginia State Medical Association,

At its recent annual meeting in Charleston, under the presidency of Dr. R. J. Wilkinson of Huntington, had a registered attendance of 323 doctors, which exceeded expectations of most of the mem-

bers. Dr. Robert J. Reed, Jr., of Wheeling was named president to take office January 1, 1944, with Dr. H. G. Steele of Bluefield and Dr. T. G. Reed of Charleston as vice-presidents. Dr. T. M. Barber of Charleston was re-elected treasurer and Mr. Charles Lively, also of Charleston, continues as executive secretary.

Dr. Catherine W. R. Smith

Has been appointed as health officer of the Smyth-Washington-Bristol Health District with headquarters at Abingdon.

Duke University.

The Medical School and Woman's College of this University will open a School of Physical Therapy on September 27th, with Dr. Lenox D. Baker, head of the Duke orthopedic service as medical director, and Miss Helen Kaiser, past president of the American Physiotherapy Association, recently of Cleveland, as technical director. This will be a nine months course of study and training and a number of scholarships will be given for the benefit of women interested in this field of work. Full information may be obtained from Duke University at Durham, N. C.

Dr. Frederick Thackston,

Who has been connected with the Benedict Coal Corporation with headquarters at St. Charles, is locating in Bristol, Virginia-Tennessee, July 1st, where he will be engaged in private practice as well as industrial practice with the Bristol Aircraft Corporation.

Grants to Medical Schools.

The medical advisory committee of The American Foundation for Tropical Medicine, Inc., at a meeting of directors on April 14, authorized grants to six North American medical schools totaling $26,100 during the first quarter of 1943.

These grants, made possible by contributions and pledges by nineteen American corporations, are being used to strengthen teaching or research programs in tropical medicine and parasitology at the various schools.

Those to receive aid were: New York University, College of Medicine; Tufts College Medical School; Tulane University School of Medicine; University of Manitoba Faculty of Medicine; University of Nebraska College of Medicine and Yale University School of Medicine. Other applications are pending.

Companies which have made contributions or formal pledges of support include: Abbott Laboratories; American Cyanamid Company; Ciba Pharmaceutical Products Corp.; Firestone Plantations Company; General Foods Corporation; Hoffman-La Roche, Inc.; The Lambert Company; Lederle Laboratories; Eli Lilly and Company; Merck & Co., Inc.; National Carbon Company; Parke Davis and Company; E. R. Squibb & Sons; United Fruit Company; William R. Warner & Company; Winthrop Chemical Company; Winthrop Products, Inc.; and John Wyeth & Brother.

Surgeon General of the Army.

The nomination of Brigadier General Norman T. Kirk as Surgeon General of the Army with the rank of Major General was confirmed by the Senate the latter part of May and on June 1 he entered upon his new duties, succeeding Major General James C. Magee, retired.

The American Congress of Physical Therapy

Will hold its annual scientific and clinical session September 8 to 11, at the Palmer House, Chicago. Rehabilitation is in the spotlight today and Physical Therapy plays an important part in this work. The annual instruction course will be held from 8:00 to 10:30 A. M., and from 1:00 to 2:00 P. M. during the days of September 8, 9 and 10, and will include a round table discussion group from 9:00 to 10:30 A. M., Thursday, September 9. The scientific and clinical sessions will be given on the remaining portions of these days and evenings. A feature will be an hour demonstration showing technic from 5:00 to 6:00 P. M. during the days of September 8, 9 and 10. All of these sessions will be open to the members of the regular medical profession and their qualified aids.

For information concerning the instruction course and program of the convention proper, address the American Congress of Physical Therapy, 30 North Michigan Avenue, Chicago, Illinois.

Location Wanted

In Virginia by physician, aged 61, excellent health, where community is in need of medical services. Address "C. W. R.", care this journal, 1200 East Clay Street, Richmond 19, Va. (*Adv.*)

XUM

Physician

Desires position or location where remuneration is weekly or monthly. Address "Physician", care this journal, 1200 East Clay Street, Richmond 19, Va. (*Adv.*)

Obituaries

Dr. Edgar Williams Young,

Prominent Petersburg physician, died May 21st, at the age of fifty-five. He graduated from the former Baltimore Medical College in 1911. Dr. Young served in World War I and was seriously wounded in the Battle of Ypres. He had practiced in Petersburg since 1920. Dr. Young had been a member of the Medical Society of Virginia for thirty years. His wife survives him.

A special meeting of the Petersburg Medical Faculty was held on May 22, to express a tribute of respect to the memory of their late colleague, Doctor Edgar W. Young.

WHEREAS, God in His infinite wisdom has this day removed from our midst a true friend and loyal colleague, who faithfully served his community, state, and nation; now, therefore, be it

RESOLVED: (First) That the Petersburg Medical Faculty bows in submission to the Divine will and deeply regrets and mourns its loss.

RESOLVED: (Second) That in the death of Dr. Young the profession has lost a valued associate and the community a useful citizen; one who volunteered his services to his country in the First World War, who was wounded in battle, and who was decorated with the Order of the Purple Heart.

RESOLVED: (Third) That the Petersburg Medical Faculty offers to his widow and to his brothers and sisters their sincere and deep sympathy in their irreparable loss; and

RESOLVED: (Fourth) That these resolutions be spread on the minutes of the Faculty, that a copy be sent to the family, and to the VIRGINIA MEDICAL MONTHLY, and be published in the *Progress-Index*.

E. L. MCGILL, M.D., *Chairman*
MEADE C. EDMUNDS, M.D.
MASON ROMAINE, M.D.

Dr. Archie Clay Monroe,

Well-known physician of Richmond, died May 21st. He was a native of Fauquier County and sixty years of age. Dr. Monroe graduated from the former University College of Medicine, Richmond, in 1907, and had practiced in Richmond for more than twenty years. He was a Mason and a member of the Medical Society of Virginia, having joined in 1907. His wife and two daughters survive him.

Dr. William Townes Wimbish,

Petersburg, died June 4th. He was sixty-eight years of age and received his medical degree from the University of Virginia in 1896. Following his graduation, Dr. Wimbish practiced in Mecklenburg County for thirty years and became a member of the medical staff of Central State Hospital in Petersburg in 1924. He had been a member of the Medical Society of Virginia for forty-one years. Four sisters and two brothers survive him.

Dr. Robert Thomas Hawks,

Coroner of Prince George County for twenty years died at his home at Carson June 8th, following a heart attack. He was sixty years of age and a graduate of the Medical College of Virginia in 1907. Dr. Hawks was prominent in the civic life of his community. He was a Mason and formerly a member of the Medical Society of Virginia. His wife and two children survive him.

Dr. Warren Fales Draper, Jr.,

Arlington, died May 17th of brain tumor. He was thirty years of age and a graduate of the George Washington University School of Medicine, Washington, D. C. Dr. Draper was an assistant surgeon in the U. S. Public Health Service and the son of the former State Health Commissioner for Virginia.

Dr. Robert Sheild Perkins,

Dean of the medical profession of Norfolk, died in June, at the age of ninety-five. He was a graduate of the Hahnemann Medical College, Philadelphia, in 1872. Dr. Perkins continued his practice in Norfolk until shortly before his death. He was a familiar figure on the streets on his rounds to his large clientele, as he had always spurned the automobile and held to his good old horse and buggy.